



IFM-GEOMAR

IFM-GEOMAR Annual Report 2011

From the Seafloor to the Atmosphere

- Marine Sciences at IFM-GEOMAR Kiel -

West Shore Campus

East Shore Campus

IFM-GEOMAR Report 2011

Editor: Andreas Villwock

Leibniz-Institut für Meereswissenschaften / Leibniz Institute of Marine Sciences

IFM-GEOMAR

Dienstgebäude Westufer / West Shore Campus

Düsternbrooker Weg 20

D-24105 Kiel

Germany

Leibniz-Institut für Meereswissenschaften / Leibniz Institute of Marine Sciences

IFM-GEOMAR

Dienstgebäude Ostufer / East Shore Campus

Wischhofstr. 1-3

D-24148 Kiel

Germany

Tel.: +49 431 600-2800

Fax: +49 431 600-2805

E-mail: info@ifm-geomar.de

Web: www.ifm-geomar.de

Contents

Preface	1
Overview	3
Scientific Highlights	21
• Deep jets in the deep equatorial Atlantic cause climate variability	22
• Enhanced Atlantic water inflow warms the Arctic	24
• Enhanced recycling of bioavailable nitrogen in sediments underlying the Peruvian oxygen minimum zone	26
• Trace gas emissions from tropical oceans influence the stratospheric ozone layer	28
• Ocean acidification affects early life stages of heavily exploited fish	30
• Does biological diversity matter for the stability of marine communities?	32
• Mass wasting and earthquakes – unexpected interrelations offshore Central Chile	34
• Deep-sea massive sulfide deposits may not represent a major resource potential	36
• Organization & Appendices	39



Preface

For IFM-GEOMAR, 2011 was characterized by the preparations for the transition to the Helmholtz Association on 1 January 2012. During the first half of the year, its strategic fit was reviewed by the Senate Commission of the Helmholtz Association, the Consortium Agreement was signed by the Federal and State Ministries and preparatory work was carried out in order to apply for programme-oriented funding, all of which created important prerequisites for this transition. At the same time, the practical work required for this transition began in the spring. This included the development of a new Corporate Design and, based on this, the redesign of printed matter as well as the website of the future GEOMAR. Furthermore, in particular in the administration adaptations to different general rules within the Helmholtz Association were also necessary.

Finally, with the adoption of the Establishment Act by the State of Schleswig-Holstein and the approval by the General Assembly of the Helmholtz Association to accept the institute as a member of the Helmholtz Association on 1 January 2012, the formal prerequisites for the new GEOMAR | Helmholtz Centre for Ocean Research Kiel were created during the second half of the year.

On the scientific side, one very notable achievement was the successful approval of the follow-up application for the Collaborative Research Centre (SFB) 754: "Climate-Biogeochemistry Interactions in the Tropical Ocean", which will secure this important line of research at IFM-GEOMAR for the next four years. The successful continuation of the SFB



is also a very encouraging signal, especially with regard to our transition to the Helmholtz Association and the resulting slight changes in the general conditions for funding by the Deutsche Forschungsgemeinschaft (German Research Foundation, DFG). Furthermore, this step emphasizes our close collaboration with the University of Kiel. This is also documented in the follow-up application for the very successful cluster of excellence, "The Future Ocean", which was submitted to the German Research Foundation in September 2011. The broad interdisciplinary collaboration in the field of marine sciences that has been carried out within the scope of this cluster over the past five years, is unique worldwide and opens up many new possibilities for joint research and evaluation of results across disciplines. We are confident that, together with our colleagues at the University and our other partners, we will also be able to continue this work in the coming years.

Again during the past year, the scientists at IFM-GEOMAR took part in numerous expeditions throughout the world to find answers to socially relevant questions from among the wide range of research topics dealt with by our institute. Their findings have been documented in hundreds of reviewed publications that were published in the relevant journals. Together with the yet again large number of acquisitions of new projects funded by third parties, this shows the scientific performance of IFM-GEOMAR and the excellence of its research. We are confident that we will be able to continue this in future at the new GEOMAR | Helmholtz Centre for Ocean Research Kiel.

This Annual Report 2011 gives you an overview of the most important performance figures, events and excellent scientific findings from the past year. I hope that you will enjoy reading it!

A handwritten signature in black ink, appearing to read 'Herzig'.

Prof. Dr. Peter M. Herzig
Director

Overview



IFM-GEOMAR at a glance

Overview

The Leibniz Institute of Marine Sciences (IFM-GEOMAR) is one of the world's leading institutions in the field of marine sciences. The institute investigates the chemical, physical, biological and geological processes of the seafloor, the oceans and their interactions with the atmosphere. This broad spectrum makes IFM-GEOMAR unique in Germany and one of the three leading institutes in Europe. Additionally, the institute has successfully bridged the gap between basic and applied science in a number of research areas.

IFM-GEOMAR has identified four overarching research themes:

- Role of the Ocean in Climate Change
- Human Impact on Marine Ecosystems
- Living and Non-Living Marine Resources
- Plate Tectonic Processes and Geological Hazards.

In cooperation with the University of Kiel, the institute is responsible for the Excellence Cluster "The Future Ocean" and two long-term Collaborative Research Centres (SFBs) that are funded by the German Research Foundation (DFG).

Four research vessels, large-scale sea-going equipment such as the manned submersible JAGO, the unmanned deep-sea robots ROV KIEL 6000 and AUV ABYSS, as well as state-of-the-art laboratories, analytical facilities, and a hierarchy of numerical models provide a unique basis for cutting-edge marine research. With a number of curricula offered in English, the institute actively contributes to the education of young scientists in the field of marine sciences.

IFM-GEOMAR is a member of the Leibniz Association, the German Marine Research Consortium (KDM), the Marine Board of the European Science Foundation and the Partnership for Observation of the Global Oceans (POGO).

Director and CEO

Prof. Dr. Peter M. Herzig

Head of Administration

Ursula Frank-Scholz

Public Relations

Dr. Andreas Villwock

Employees

764 including 383 scientists (End of 2011)

Budget

59,4 million euros:
- 31,3 million euros institutional funding
- 28,1 million euros research funding

Contact

Leibniz Institute of Marine Sciences (IFM-GEOMAR)

East Shore Campus, Wischhofstr. 1-3
D-24148 Kiel

Germany

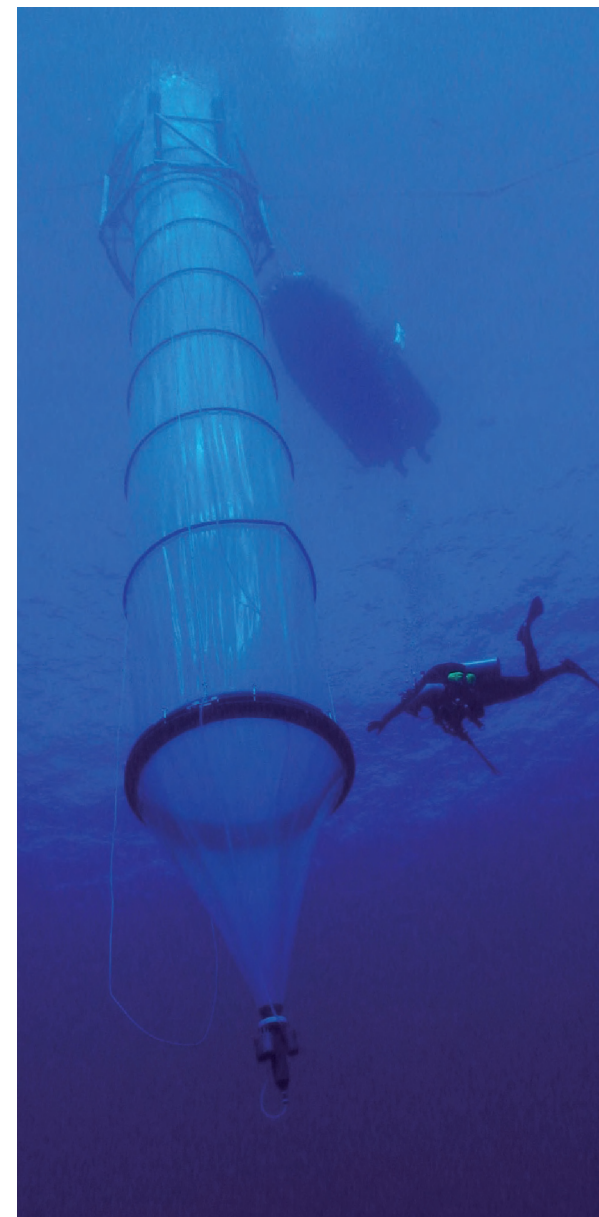
Tel.: +49-431/600-0

Fax.: +49-431/600-2805

Email: info@ifm-geomar.de

Internet: <http://www.ifm-geomar.de>

Email: info@ifm-geomar.de



1. Transition to the Helmholtz Association

IFM-GEOMAR's transition to the Helmholtz Association was prepared at various levels throughout the year 2011. The key parameters at the administrative and political levels were:

- strategic fit reviewed by the Senate Commission of the Helmholtz Association at IFM-GEOMAR on 28 February 2011;
- preparation of the third phase of programme-oriented funding (POF-III). Drafting of a programme application: "The blue ocean - from the deep sea to the atmosphere (OCEANS)". Furthermore, participation in the programme application managed by the Alfred Wegener Institute for Polar and Marine Research (AWI) as well as in the application made by the German Research Centre for Geosciences (GFZ). The spokesperson for IFM-GEOMAR is Professor Dr. Kaj Hoernle;



Evaluation of Helmholtz fit: left: Secretary of State of S.-H. Dr. Cordelia Andreßen, Prof. Dr. Jürgen Mlynek (President, Helmholtz- Association) and Prof. Dr. Peter Herzig (Director, IFM-GEOMAR).



Signment of the Consortium Agreement: left to right: Prof. Dr. Gerhard Fouquet (President Kiel University), Prof. Dr. Karin Lochte (Chair, German Marine Research Consortium), Peter Harry Carstensen (Prime Minister Schleswig-Holstein), Prof. Dr. Annette Schavan (Federal Minister for Education and Research) and Prof. Dr. Peter Herzig (Director, IFM-GEOMAR).

- adoption of a new name for the Institute: GEOMAR | Helmholtz Centre for Ocean Research Kiel;
- signing of the Consortium Agreement by the Federal and State Ministries and the Cooperation Agreement KAIMS (CAU/ IFM-GEOMAR) at the Representation of the State of Schleswig-Holstein in Berlin on 9 May 2011;
- adoption of the Establishment Act, taking the Institute's petition as presented by the State Government on 26 August 2012 into consideration;
- advertisement of the newly created position of Administrative Director, appointment of a Selection Committee;
- approval by the General Assembly of the

Helmholtz Association to accept the Institute in the Helmholtz Association as from 1 January 2012;

- first successful proposals for funding by the Helmholtz Association. This included: funding for applications within the scope of Calls for Proposals issued under the Initiative and Networking Fund: junior research group "Marine and Atmospheric Chemistry" led by Dr. Christa Marandino, financial support for equipment to ensure excellence and appointment of Professor Heidrun Kopp to a professorship (W3) for "Marine Geodesy", financial support as part of the appointment of Professor Anja Engel, Helmholtz Russia Joint Research Group "European and Russian Extreme Events: Mechanisms, Variability and Future Climate Change (EUREX)" by Professor Douglas Maraun;
- basic concept for a new Corporate Design for GEOMAR was completed and implemented;
- Administration Department and auditors for GEOMAR prepared the switch to commercial accounting (Doppik double-entry accounting system) as from 1 January 2012;
- definition of the starting values for GEOMAR in the Helmholtz Association for the years 2012 to 2014. The increase in the starting value at the beginning of the programme-oriented funding in 2014 amounts to € 7.8 mio. plus investments in the amount of € 3.9 mio.. In addition to the progressive increase in the starting values for the years 2012 and 2013, investment funds in the amount of € 3.5 mio. and € 3.7 mio. respectively were approved for the years 2012 and 2013.

2. Research funding

In 2011, basic funding (institutional funding) amounted to € 31.3 mio. Total project funding amounted to € 28.1 mio., of which more than € 10 mio. was provided by the DFG (incl. cluster and SFBs), € 7.7 mio. through BMBF projects (Federal Ministry of Education and Research) and just under € 4.2 mio. through EU funds. In addition, over

Budget 2004-2011



Project Funding 2004 - 2011

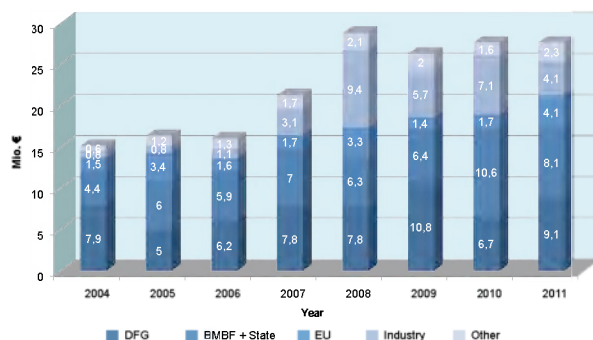


Fig. 1.1 & 1.2: Development of the total budget (top) and project funding (by sources) (below) from 2004-2011.

€ 4.4 mio. was received from funding in collaboration with various business companies. For several years now, both institutional funding as well as the acquisition of third-party funding have remained stable at the same high level (Fig. 1.1). The composition of project funding is more variable; the most important pillars here are the funds from the Deutsche Forschungsgemeinschaft (German Research Foundation, DFG) as well as funds from the Federal German Ministry of Education and Research (cf. Fig. 1.2).

Please refer to Appendix 3 for details on research funding.

Development of existing major projects:

SFB 754: "Climate-Biogeochemistry Interactions in the Tropical Ocean"

This project, which has been funded by the DFG since 2008, completed its first phase in 2011. We would like to emphasize the following events from the past year:



- March-April 2011: MARIA S. MERIAN Expedition 17/4 to the eastern Atlantic off the coast of north-west Africa, headed by Dr. Pfannkuche. Objective: investigation of the oxygen minimum zone;
- May-June 2011: MARIA S. MERIAN Expedition 18/2 to the eastern Atlantic off the Cape Verde Islands, headed by Professor Brandt. Objective: mooring recovery and data sampling along a section at 23°W;
- September 2011: on-site review by a DFG Review Panel for the 2nd funding phase (2012-2016) successfully completed. The international Review Panel evaluated the SFB as "very good" to "excellent";

- December 2011: notice awarding a grant for the 2nd phase in the amount of 11.5 mio. euros, without changes to the recommendations given by the Review Panel;
- December 2011: Election of Professor Dr. Andreas Oschlies as new spokesperson.

SFB 574: "Fluids and Volatiles in Subduction Zones"

After running for 10 years, the project is now in its final phase and will be completed in the summer of 2012. The most important events of the past year included:



- November 2010-January 2011: two MARIA S. MERIAN expeditions: Merian MSM 17/1 & 17/2 to the south-east Atlantic, headed by Professor Behrmann;
- Feb. / March: several land expeditions to different volcanoes in Chile (PIs: Professor Hoernle, Dr. Hansteen and Dr. Freundt).

Cluster of Excellence: "The Future Ocean"

The cluster of excellence "The Future Ocean", which has been running since 2006, prepared the follow-up application in 2011 for the second funding phase for 2013-2017. It was submitted on time on 1 September 2011. The review will take place on 12 January 2012. The key focus in the second phase will be on the internationalisation as well as the integration of the social sciences.



Since June 2011, the cluster has also had a small permanent exhibition at the Zoological Museum of the University of Kiel.

New research projects (extract)

Some of the projects funded by third parties that were newly approved in the past year are presented here as an example. Please refer to Appendix 3.2 for a complete list of all projects.

1. ECO2 (Sub-seabed CO₂ Storage: Impact on Marine Ecosystems)

The objective of this EU project (7th framework programme) is to investigate existing as well as potential submarine deposits for CO₂ and the impact of possible leakages on the marine environment.



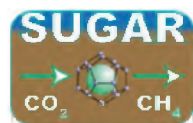
The funding volume amounts to € 10.5 mio. (of which € 2.3 mio. goes to IFM-GEOMAR). The Kick-off Workshop took place in Kiel from 18-20 May 2011. ECO2 is coordinated by Professor Klaus Wallmann (IFM-GEOMAR) and runs from 2011-2014.

The first expedition on the ALKOR took place in the northern North Sea from 29 April - 14 June 2011. The objective was to investigate possible outgassing in the Sleipner field.

For more information, please visit: www.eco2-project.eu

2. SUGAR Phase II ("Submarine Gas Hydrate Reservoirs")

In the second phase of the project on submarine gas hydrate reservoirs, jointly funded by the Federal German Ministry of Economics and Technology (BMWi) and the BMBF, the methods for producing methane while simultaneously storing carbon dioxide are to be developed further and tested. The project



has a funding volume of: € 13 mio., IFM-GEOMAR's share: € 3.7 mio. for a three-year period (2011-2014). The coordinator is Professor Klaus Wallmann.

For more information, please visit: www.sugar-projekt.de

3. CARBOCHANGE ("Changes in carbon uptake and emissions by oceans in a changing climate")

CARBOCHANGE is an EU joint research project (2011-2015). Its objective is to quantify the amount of carbon dioxide that is emitted during human activity and taken up by the ocean and determine the extent to which the rate of collection changes. The University of Bergen in Norway is the coordinating facility for this project, which has a funding volume of € 7 mio. € (of which € 675,000 goes to IFM-GEOMAR).

For more information, please visit: <http://carbochange.b.uib.no/>

4. GROOM ("Gliders for Research, Ocean Observation and Management")

The objective of GROOM is the development of a European research infrastructure for the coordinated use of gliders. The project is coordinated by the Université Pierre et Marie Curie, Paris, France, within the scope of the 7th EU framework programme. The funding volume amounts to € 3.5 mio. (of which € 430,000 goes to IFM-GEOMAR). The coordinator at IFM-GEOMAR for this project, which runs from 2011-2014, is Dr. Johannes Kars-
tensen.

For more information, please visit: http://plocan.eu/en/images/stories/project/GROOM_en.pdf

5. Otto Schmidt Laboratory for Polar and Marine Research

The Otto Schmidt Laboratory (OSL) was founded in 1999. It is operated and financed for the Russians by the Arctic and Antarctic Research Institute (AARI) in St. Petersburg, the Russian Ministry for Science and Education and the Federal Hydrometeorological and Environment Service as well as, for the Germans, the Federal German Ministry of Education and Research, the Alfred Wegener Institute for Polar and Marine Research in Bremerhaven and IFM-GEOMAR. Furthermore, more than 40 universities and research facilities in Russia and Germany work together at the OSL. One of the main tasks of the OSL, apart from coordination, is the scientific qualification and promotion of young scientists.

The new project is a scholarship programme: "Climate Change in the Arctic Ocean" with a funding volume of € 990,000; it will run for three years (2012-2014). The coordinator is Dr. Heidemarie Kassens from IFM-GEOMAR.

For more information, please visit: www.otto.nw.ru

New research projects with industrial partners

GEOHAZARD Turkmenistan

The objective of the project is to investigate natural hazards attributable to geogenic sources for offshore drilling in Turkmenistan. In particular, mud volcanoes in the southern Caspian Sea basin will be investigated. The project led by Dr. Warner Brückmann has a volume of € 1.15 mio. for the period 2011-2015. Industry partner is RWE Dea.

Please refer to Appendix 3.2 for detailed information on all projects.

Expeditions



3. Expeditions

One of the main components of a marine research facility are the expeditions on research vessels. Once again during the past year, the scientists at IFM-GEOMAR undertook a larger number of expeditions on the Institute's own research vessels as well as on other German and foreign platforms. For details, please refer to Fig. 1.3 and 1.4 as well as Appendix 4. Land-based expeditions

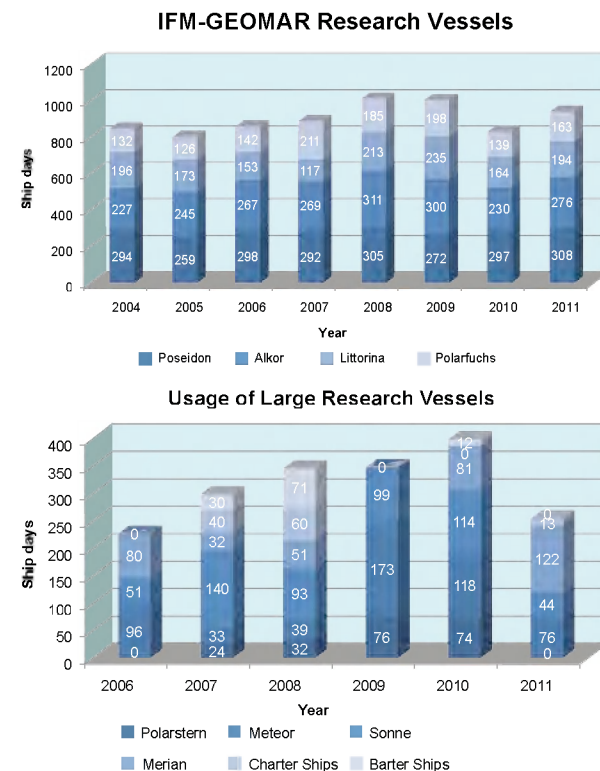


Fig. 1.3 & 1.4: Usage of IFM-GEOMAR research vessels (top) and usage of other research vessels by IFM-GEOMAR (below) from 2004-2011.

took place in Chile in the spring of 2011 (SFB574) and along the Saudi Arabian coast (JEDDAH Project) as well as in the north Siberian Laptev Sea in the autumn. The most important ship-based voyages included:

3.1 RV CHAKRTONG TONGYAI

6 - 26 January 2011, off the coast of Thailand, TRIAS /MASS ; objective: bathymetric and seismic data sampling; taking samples for estimating the possibility of landslides; chief scientist: Professor Krastel

3.2 MERIAN MSM 17/1-2

two expeditions (23 November 2010 - 27 January 2011) in the south-east Atlantic off the coast of Namibia with the scope of SFB 574; objective: to investigate the crustal and lithospheric structure of the southern African plate and the formation of the South Atlantic; chief scientist: Professor Behrmann

3.3 POSEIDON POS 408/1-3

three expeditions to the Red Sea within the scope of the cooperation with the King Abdul-Aziz University, Jeddah, Saudi Arabia:

- 13 - 31 January 2011; objective: rifting processes in the Red Sea; chief scientist: Professor Devey;
- 3 - 20 February 2011; objective: investigation of volcanism, hydrothermalism and ore deposits in the Atlantis II Deep; chief scientist: Dr. Schmidt;
- 23 February - 3 March 2011; objective: investigation of nutrients, algae and coral in the central and northern Red Sea; chief scientist: Professor Sommer.

3.4 SONNE SO 214

9 March - 22 April 2011, Wellington - Auckland, NEMESYS; objective: variability



Jeddah Project: Sampling of a coral in the Red Sea.



Unusual for marine scientists: SFB 574 land expedition with horses in den Chilean Andes.

of submarine gas leaks in structure and chemistry and their impact on the climate; chief scientist: Dr. Bialas.

3.5. MERIAN MSM 17/4

10 March - 12 April 2011, eastern Atlantic off the coast of Senegal and Mauritania;



Rare view: the sister ships ALKOR (right) and Heincke (left) joint returning into the Kiel Fjord.

objective: investigation of the oxygen minimum zone (OMZ) within the scope of the Collaborative Research Centre (SFB) 754; chief scientist: Dr. Pfannkuche.

3.6 METEOR 84/3

5 - 28 April 2011, Istanbul-Vigo, Mediterranean; objective: investigation of the large-scale distribution of water mass properties as a result of an observed shift of the deep water formation from the Adriatic to the Aegean Sea; chief scientist: Dr. Tanhua.

3.7 ALKOR AL 371

8 - 21 April 2011, Kiel-Kiel, Baltic Sea; objective: investigations within the scope of various projects in the field of evolutionary ecology of marine fish, incl. Aquashift, EPOCA; chief scientist: Professor Reusch.

3.8 POSEIDON POS 412

19 April - 7 May 2011, Thyrrenian Sea, north of Sicily; objective: geological, chemical and biological characterisation of ecosystems in geological formations such

as the Palinuro volcanic complex, the Panarea hydrothermal field and the Marsili seamount; chief scientist: Professor Imhoff.

3.9 MERIAN MSM 18/2-3

Two expeditions to the eastern equatorial Atlantic. Objective: current systems, characteristics of water masses, oxygen minimum zones in the eastern equatorial Atlantic.

- 11 May - 19 June 2011, Mindelo-Mindelo, BMBF North Atlantic, SOPRAN and SFB 754; chief scientist: Professor Brandt.
- 22 June - 21 July 2011, Mindelo-Libreville, BMBF North Atlantic, SOPRAN and SFB 754; chief scientist: Professor Körtzinger.

3.10 METEOR 84/5

31 May - 21 June 2011, Vigo-Brest, Bay of Biscay, TransBiscay; objective: palaeo-oceanographic work in the Bay of Biscay; chief scientist: Dr. Flögel.

3.11 ALKOR AL 374

29 April - 14 June 2011, Kiel-Kiel, northern North Sea, ECO2; objective: investigation of possible CO₂ emissions in the Sleipner field; chief scientist: Dr. Linke.

3.12 MERIAN MSM 18/4

5 - 25 August 2011, St. John's-Reykjavik, BMBF North Atlantic, THOR, EuroSITES; objective: variability of current systems in time in the North Atlantic; chief scientist: Dr. Karstensen.

3.13 POSEIDON POS 419/1

10 August - 2 September 2011, Tromsø-Tromsø, HERMIONE & cluster of excellence: "The Future Ocean"; objective: biological and biogeochemical processes by releasing methane from melting gas hydrates west

of Svalbard; chief scientist: Dr. Pfannkuche.

3.14 POSEIDON POS 420/1 and the submersible "JAGO"

5 - 30 September 2011, Tromsø-Kiel, shelf west of Norway, BIOACID; objective: investigation of cold water corals; chief scientist: Professor Riebesell.



Research submersible JAGO and RV POSEIDON in Trondheim Fjord, Norway.

3.15 SONNE SO 218

15 - 29 November 2011, Singapore-Manila, West Pacific / South China Sea, SHIVA Project; objective: processes for transporting bromine from the ocean into the stratosphere; chief scientists: Dr. Krüger / Dr. Quack.

3.16 MERIAN MSM 19/3

2 - 22 December 2011, Cape Town-Cape Town, AGULHAS Project; objective: mapping the sea floor and taking samples of hard rock from volcanic structures in the area around the Agulhas Ridge and the Discovery hotspot in the South Atlantic; chief scientist: Dr. Werner.

4. Large-scale equipment and infrastructure

As part from the research vessels, IFM-GEOMAR maintains large equipment that allows it to take samples and carry out experiments in parts of the world's oceans that would otherwise be difficult to access, in particular in the deep sea. In 2011, in addition to the deep sea robots ROV Kiel6000 and AUV ABYSS, a further remote-controlled vehicle, PHOCA, was put into service. This device can dive up to 3,000 meters deep and used even on medium-sized vessels such as the RV POSEIDON. It was procured within the scope of the MoLab Project. Initial operation planned for 2012. The so-called "benthocosms" were procured as a further experimental facility, to be used in particular for exploring the effect of changed environmental conditions on organisms that live on the seabed (benthic flora and fauna). In 2011, IFM-GEOMAR operated this large equipment as follows:

4.1 ROV Kiel 6000

13 July - 3 August 2011: RV POLARSTERN expedition ARK XXVI/2, Framstrasse, HAUSGARTEN Observatory in cooperation with the Alfred Wegener Institute for Polar and Marine Research, Bremerhaven
November 2011, used on the RV JAMES COOK for an expedition to the southern Indian Ocean together with British Antarctic Survey, Cambridge in cooperation with the National Oceanography Centre (NOC), Southampton, UK.

4.2 ROV PHOCA

March-April 2011: first test with the support of the German Bundeswehr Technical



PHOCA test in Eckernförde.

Centre 71 in Eckernförde. Plans for initial operation off the coast of Norway within the scope of the MoLab Project 2012.

4.3 AUV „ABYSS“

March-April 2011: operated on the RV ALUCIA for a new search for the missing Air France Airbus; wreck found on 3 April 2011.

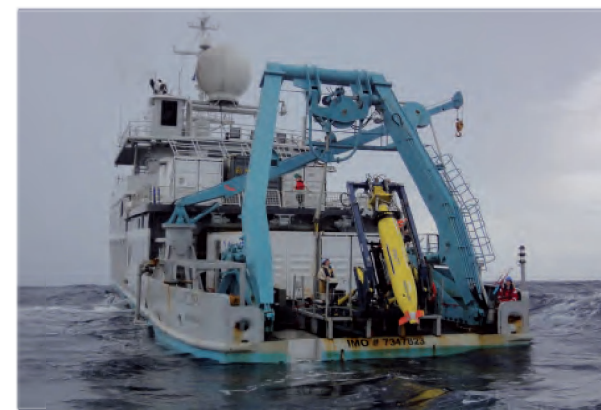
November 2011, expedition on the RV KILO MOANA in the western Pacific (Lau Basin) in cooperation with Nautilus Minerals Inc.



Part of wreck of Air France airbus in the Atlantic.

4.4 Research Submersible "JAGO"

April 2011: operated on the RV GARCIA DEL CID off the coast of the Balearic Islands together with scientists from Institut de Ciències del Mar in Barcelona within the scope of the EU Project LIFE+INDEMARES/Natura 2000.



AUV ABYSS launched from RV KILO MOANA.

September 2011, operated on RV POSEIDON off the coast of Norway for investigating ocean acidification and cold water corals; chief scientists: Dr. Form / Professor Riebesell.

4.5 Kiel Mesocosm System

May-June 2011: experiment in the fjord off Bergen, Norway;

November-December 2011, experiment off the coast of Hawaii; chief scientist: Professor Riebesell.



Installation of the mesocosm off Hawaii.

5. Scientific achievements and publications

More than 350 reviewed scientific articles in the year 2011 document IFM-GEOMAR's ongoing high level of scientific performance. The publication output of the individual fields of research (measured according to so-called "Journal Impact Factor" points) has remained stable at a very high level for a number of years (Fig. 1.5).

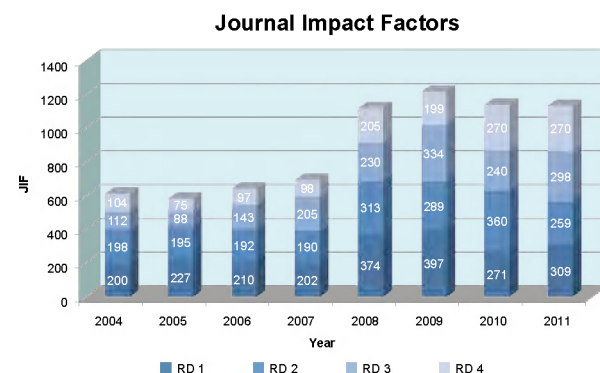


Fig. 1.5: Scientific publications (accounted by journal impact factors) by research divisions from 2004-2011.

Amongst those, the following publications appeared in the high-level international journals *Science* and *Nature*:

Beal, L. M., De Ruijter, W. P. M., Biastoch, A., Zahn, R., Cronin, M., Hermes, J., Lutjeharms, J., Quartly, G., Tozuka, T., Baker-Yeboah, S., Bornman, T., Cipollini, P., Dijkstra, H., Hall, I., Park, W., Peeters, F., Penven, P., Ridderinkhof, H. and Zinke, J., 2011: On the role of the Agulhas system in ocean circulation and climate. *Nature*, **472** (7344), 429-436, DOI [10.1038/nature09983](https://doi.org/10.1038/nature09983).

Brandt, P., Funk, A., Hormann, V., Dengler, M., Greatbatch, R. J. and Toole, J. M., 2011: Interannual atmospheric variability forced by the deep equatorial Atlantic Ocean. *Nature*, **473** (7348), 497-500, DOI [10.1038/nature10013](https://doi.org/10.1038/nature10013).

Frank, M., 2011: Chemical twins, separated. *Nature Geoscience*, **4** (4), 220-221, DOI [10.1038/ngeo1125](https://doi.org/10.1038/ngeo1125).

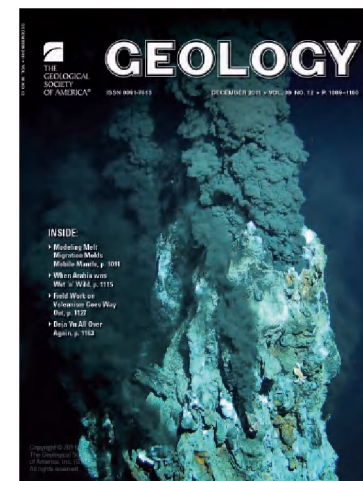
Hoernle, K., Hauff, F., Werner, R., van den Bogaard, P., Gibbons, A. D., Conrad, S. and Müller, R. D., 2011: Origin of Indian Ocean Seamount Province by shallow recycling of continental lithosphere. *Nature Geoscience*, **4** (12), 883-887, DOI [10.1038/ngeo1331](https://doi.org/10.1038/ngeo1331).

Joye, S. B., Leifer, I., MacDonald, I. R., Chanton, J. P., Meile, C. D., Teske, A. P., Kostka, J. E., Chistoserdova, L., Coffin, R., Hollander, D., Kastner, M., Montoya, J. P., Rehder, G., Solomon, E., Treude, T. and Villareal, T. A., 2011: Comment on "A Persistent Oxygen Anomaly Reveals the Fate of Spilled Methane in the Deep Gulf of Mexico". *Science*, **332** (6033), 1033, DOI [10.1126/science.1203307](https://doi.org/10.1126/science.1203307).

Spielhagen, R.F., K. Werner, S. Aagaard Sørensen, K. Zamelczyk, E. Kandiano, G. Budeus, K. Husum, T. M. Marchitto, M. Hald, 2011: Enhanced Modern Heat Transfer to the Arctic by Warm Atlantic Water. *Science*, **331**, 450-453, DOI [10.1126/science.1197397](https://doi.org/10.1126/science.1197397).

Stroncik, N. A. and Devey, C. W., 2011: Recycled gabbro signature in hotspot magmas unveiled by plume-ridge interactions. *Nature Geoscience*, **4**, 393-397, DOI [10.1038/NNGEO1121](https://doi.org/10.1038/NNGEO1121).

Worzewski, T., Jegen, M., Kopp, H., Brasse, H. and Taylor, W. T., 2011: Magnetotelluric



Front page of the intl. journal *Geology*, December 2011: Hannington, M., J. Jamieson, T. Monecke, S. Petersen, and S. Beaulieu, 2011: The abundance of seafloor massive sulfide deposits. *Geology*, **39**, 1155-1158, doi: [doi:10.1130/G32328.1](https://doi.org/10.1130/G32328.1).

image of the fluid cycle in the Costa Rican subduction zone. *Nature Geoscience*, **4**, 108-111, DOI [10.1038/ngeo1041](https://doi.org/10.1038/ngeo1041).

Wu, L., Jing, Z., Riser, S. and Visbeck, M., 2011: Seasonal and spatial variations of Southern Ocean diapycnal mixing from Argo profiling floats. *Nature Geoscience*, **4** (6), 363-366, DOI [10.1038/ngeo1156](https://doi.org/10.1038/ngeo1156).

Please refer to Appendix 6 for a detailed list of all publications.

A selection of some of the scientific highlights of the past year is presented in Chapter 2. These include, among others, investigations on equatorial current systems, climate changes in the Arctic, oxygen minimum zones off the coast of Peru, impact of ocean acidification on fish stocks or the value of mineral resources as a source of raw materials for the future.

6. Personnel

At the end of 2011, 764 members of staff were employed at IFM-GEOMAR. This means that the overall number of employees was almost the same as in the previous year. 50% of the employees work in the scientific field. Women represent 46% of the total number of staff and approx. 40% of the scientists. The percentage of women among the professors is still rather low, but was increased in the course of new appointments (see below). 72% of the employment contracts have a fixed period; about 80% in the scientific field. Personnel development, subdivided into organisational units, is depicted in Fig. 1.6.

For further details, please refer to Appendix 2.

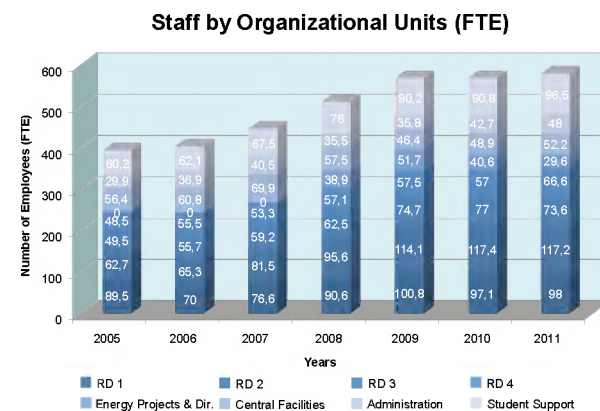


Fig. 1.6: Development of personell by organizational units 2004-2011.

6.1 Changes in management staff

The following changes were carried out at the Professorial level in 2011:

- Biological Oceanography (W3, successor for Professor Lochte): Professor Anja Engel, AWI; commencement of duties: 1 September 2011.



Prof. Dr. Anja Engel.

- Marine Meteorology (W3, successor for Professor Macke): Professor Katja Matthes, GFZ and FU Berlin; commencement of duties August 2012.



Prof. Dr. Katja Matthes

- Marine Meteorology (W1, successor for Professor Dommenges): Professor Douglas Maraun, Justus Liebig University of Gießen.



Prof. Dr. Douglas Maraun.

- Seafloor Resources (W3, permanent adoption of a junior professorship from the cluster of excellence): Professor Lars Rüpke.



Prof. Dr. Lars Rüpke.

- Marine Geobiology (W3, permanent adoption of a junior professorship from the cluster of excellence): Professor Tina Treude.



Top: Prof. Dr. Tina Treude.
Below: Prof. Dr. Andreas Oschlies.



Negotiations with Professor Andreas Oschlies (Biogeochemical Modelling) were successfully concluded and he will remain in office. The vacancy to refill the W3 Chair for Chemical Oceanography (successor for Professor Wallace) has been published.

6.2 Honors and Awards (selection)

During the past year, the following members of staff received awards or distinctions for special scientific achievements:

- **Prof. Dr. Wolf-Christian Dullo:** Werner Heisenberg-Medal from the Alexander von Humboldt Foundation



Prof. Dr. Wolf-Christian Dullo.



Prof. Dr. Ulf Riebesell, Prof. Dr. Heidrun Kopp and Prof. Dr. Andreas Oschlies at EGU in Vienna, Austria.

- **Prof. Dr. Heidrun Kopp:** C.F.Gauß Lecture of the German Geophysical Society (DGG) at the European Geosciences Union
- **Prof. Dr. Andreas Oschlies:** Georg-Wüst Prize 2011, German Society for Marine Research (DGM)
- **Prof. Dr. Ulf Riebesell:** Vladimir Ivanovich Vernadsky Medal of the European Geosciences Union
- **IFM-GEOMAR Publication Award 2011** (1,000 euros each, sponsored by the Deutsche Bank):
 - **Dr. Sascha Flögel**, Palaeo-Oceanography
 - **Dr. Jutta Wiese**, Active Marine Substances Research
 - **Dr. Folkmar Hauff**, Geochemistry as well as 500.00 euros each for their excellent first publications:
 - **Lisa Bohlen**, Marine Biogeochemistry
 - **Jan Taucher**, Biogeochemical Modelling

For a complete list of all awards, please refer to Appendix 7.



Winners of the publication award 2011 with IFM-GEOMAR management. From left: Prof. Dr. Peter Herzig, Jan Taucher, Dr. Sascha Flögel, Lisa Bohlen, Dr. Jutta Wiese and Ursula Frank-Scholz. Not of the photo: Dr. Folkmar Hauff.

7. Teaching

The professors at IFM-GEOMAR continue to contribute in numerous ways to education in the field of marine science study programmes. Apart from lectures, exercises, seminars and workshops within the scope of the reduced teaching load for non-university research facilities (four credit hours per week), final thesis (for Bachelor's and Master's degrees as well as German diplomas and doctorates) are supervised and evaluated. The development of academic qualification work, subdivided into fields of research, is depicted in Fig. 1.7. This figure, which has increased enormously, also results from the conversion to courses finishing with a Bachelor's or Master's degree, because theses must now be written for both of these courses (previously only for a German diploma). For further details, please refer to Appendix 5.7 (Academic Qualification Work) and Appendix 8 (Lectures). For the period of transition before IFM-GEOMAR became part of the Helmholtz Association, the Cooperation Agreement KAIMS laid an important found-

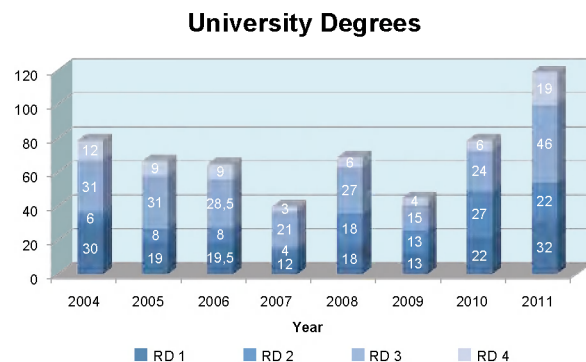


Fig. 1.7: University degrees (bachelor, master, PhD, habilitation) by research divisions from 2004-2011.



Beside lectures, practical exercises are of particular importance for the next generation of marine scientists. Sampling of a sediment core in Marine Geology.

dation for the future collaboration with the University of Kiel. This includes joint search procedures for professors; in addition, the existing scope of commitment to teaching will be continued.

8. European and international cooperations

Apart from the individual cooperations that exist at the scientific level with a large number of facilities worldwide, which are impressively substantiated by numerous joint publications, and the research association projects at the European level, there are also many cooperations at an institutional level that focus, in particular, on strategic aspects. Events and developments occurred during 2011 in the following sectors, which should receive special mention:

G3-Cooperation (National Oceanography Centre (UK), Ifremer (F), IFM-GEOMAR (D))

- Lunch Briefing at the European Parliament on 2 February 2011 at the initiative of the German Marine Consortium and at the invitation of MEP Reimer Böge (topic: Resources from the Sea);
- 8th G3 Workshop on 28 November 2011 in Southampton, UK.

Cooperation with China

- Foundation of a Chinese-German Centre for Cooperation in Marine Sciences in Qingdao on 24 February 2011 to support the scientific exchange between Kiel, Bremen and Qingdao;
- 5 - 17 September 2011, Chinese-German Workshop and Summer School, organized by the "Chinese-German Centre for Collaboration in Marine Sciences" (SGMS) in Qingdao, China. The key focus of the events, which approx. 50 people from China and Germany attended, was on



Opening ceremony of the Sino-German Center for Cooperation in Marine Sciences in Qingdao, China.

Overview

investigating seas with regard to changes in the environment;

- since October 2011: supporting the exchange programme for educating graduates and doctoral students from the Integrated School of Ocean Sciences (ISOS). Co-financing of the coordinating position by IFM-GEOMAR.

Cooperation with Canada

- German-Canadian Conference, approx. 100 participants, in Halifax, Canada, from 2-4 June 2011 during Oceans Week at Dalhousie University. Intensifying contacts after Professor Dr. Douglas Wallace began working at the newly founded Halifax Marine Research Institute.



From left: Prof. Doug Wallace, scientific director of the new Halifax Marine Research Institute, Dr. Martha Crago, Vice-President Research, Dalhousie University, Prof. Peter Herzig, Director, IFM-GEOMAR.

Cooperation with Saudi Arabia

- Kick-off Meeting for the Poseidon Expedition within the scope of the Jeddah-Transect Project at the King Abdullah Aziz University in Jeddah (11 January 2011)



Prof. Dr. Peter Herzig (2.v.l.) with representatives of the King Abdullah Aziz University in front of the research vessel POSEIDON in Jeddah.

Further information: www.jeddah-projekt.de

Cooperation with Cape Verde

- Professor Dr. Peter Herzig attended consultations with representatives from the Government of the Republic of Cape Verde in Praia from 16 - 18 June 2011 regarding



A loggerhead turtle (*Caretta caretta*) equipped with a transmitter from IFM-GEOMAR on her way back into the ocean.

the further expansion of the Ocean Observatory;

- August 2011: Start of a new, interdisciplinary research project to investigate the migration of the world's third largest turtle population, the endangered species 'loggerhead turtle' (*Caretta caretta*) as well as their mechanisms and the genetics of their reproduction.

Cooperation with Taiwan

- 2nd German-Taiwanese Gas Hydrate Workshop at IFM-GEOMAR from 12 - 13 July 2011, with 21 participating scientists from Taiwan and Germany.

Cooperation with Russia



Participants of the German-Taiwanese Workshop on Gas Hydrates.

- Otto Schmidt Laboratory Scholarship Programme, coordinated by: Dr. H. Kassens (IFM-GEOMAR) (see p. 5);
- Helmholtz-Russian Joint Research Group "European and Russian Extreme Events: Mechanisms, Variability and Future Climate Change (EUREX)" (see p. 3).

9. Institutional matters, notable events, visitors and public relations

9.1 Extension building

The transition to the Helmholtz Association resulted in several modifications to the planning process for the new extension. Consequently, there was a slight delay in planning; the project as a whole was not, however, called into question. The most important milestones in 2011 were:

- discussion regarding building coordination, which was also attended by the BMBF, BMVBS, MWV, FM and IFM-GEOMAR, during the first half of July 2011;
- appointment of a building engineer until the end of 2011;
- appointment of a Technical Project Manager from January 2012 to prepare the competition for the realisation of the building in the summer of 2012.

Planned building phase: 2013- 2015.

9.2 Deutsche Bank – IFM-GEOMAR Marine Award

The Deutsche Bank – IFM-GEOMAR Marine Award was awarded for the third time in 2011. The winner of this award, endowed with 10,000 euros, was best-selling author Frank Schätzing ("The Swarm"). The congratulatory speech was held by the scientific journalist Karsten Schwanke (television programme: Abenteuer Wissen, ZDF). The award was presented during a ceremony in Kiel on 23 May 2011.



From left: Till Keulen (Deutsche Bank) with Frank Schätzing and Prof. Dr. Peter Herzig.

9.3 Excellence Programme of the "Professor Dr. Werner Petersen Foundation"

Each of the visiting professor positions have been set up with a grant of 20,000 euros. During a research visit lasting several weeks, these excellent scientists hold a course for students; in addition, they give a public lecture one evening. In 2011, this



Prof. Dr. Mark Hannington.

once again took place at the Art Gallery in Kiel; each lecture was well attended by more than 100 guests.

The following scientists were honoured in 2011:

- Dr. Sinéad Collins (University of Edinburgh, UK), Marine Biology
- Professor Dr. Mark D. Hannington (University of Ottawa, Canada), Economic Geology
- Professor Dr. Uwe Send (University of San Diego, USA), Physical Oceanography

9.4. Visitors

Once again last year, a number of distinguished guests were welcomed to IFM-GEOMAR. Among them were:

- Mrs. Bettina Wulff, wife of the Federal President, and Mrs. Sandra Carstensen, wife of the State Prime Minister of Schleswig-Holstein (9 March 2011);
- the Brazilian Delegation, with 20 representatives from the Universidade Estadual Paulista Julio des Mesquita Filho (UNESP) in São Paulo and Petrobras (28 March



Bettina Wulff signing in the IFM-GEOMAR guest book.



German prime ministers welcomed on board of RV ALKOR.

- 2011);
- an international group of young diplomats (11 May 2011);
- a group of science counsellors from foreign embassies (8 June 2011);
- Dr. Juliane Rumpf, Minister of Agriculture, Environment and Rural Areas in Schleswig-Holstein (9 August 2011);
- members of the working group on education from the Christian Democratic Union Party of the Schleswig-Holstein Parliament (11 August 2011);
- Personnel Committee of the Helmholtz Association (26-27 September 2011);
- 27 October 2011: Reception and informal chat during the State Prime Ministers' Conference on the ALKOR in Lübeck.

*Left col: top: "young diplomats"
Middle: Science counsellors from foreign embassies in Germany
Bottom: Minister Dr. Juliane Rumpf with Prof. Dr. Martin Wahl (left) at the benthoscosm facility.*

Further international guests who spent a longer period of time at IFM-GEOMAR: Professor Theophilus Davis (Humboldt Fellow, U. Venda, South Africa), Professor James B. Gill (Humboldt Research Award, U. California, Santa Cruz, USA), Professor Uwe Send (Petersen award, SIO, La Jolla, USA), Professor Mark Hannington (Petersen award, U. Ottawa, Canada), Dr. Sinead Collins (Petersen award, U. Edinburgh, UK).

Guided tours / Visits to the Institute: A visitor's programme lasting about two hours is available for registered groups, during which it is possible to have a presentation of the Institute's work and to visit parts of the facility during a guided tour. To the extent possible, individual topical requests are taken into consideration. About 60 groups with a total of almost 2,000 participants took advantage of this offer in 2011.

9.5 Public relations and other events

Please refer to Appendix 7 for an overview of the many scientific events that took place at IFM-GEOMAR in 2011 or were organized by the members of the Institute. The Institute held numerous further activities as a means of presenting itself at an international level. These included:

- 26-29 April 2011: 1st "Easter School" on Marine Biology for pupils;
- May to October 2011: Contribution to an exhibition on the subject of active marine substances research on board of the 'science ship' during the official Year of Health;
- 7-8 May 2011: "Hands-on Marine Animals" at the Kids' Festival;



Kids-festival: touching a living crab for the first time.

- 19 May 2011: Opening event of the national German competition "Jugend forscht" (young scientists' competition) with about 200 participants;
- 26 May 2011: Participation in the scientific event: "Stadt der jungen Forscher" (city of young scientists) in Kiel: presentations by pupils and presentation of the Institute on



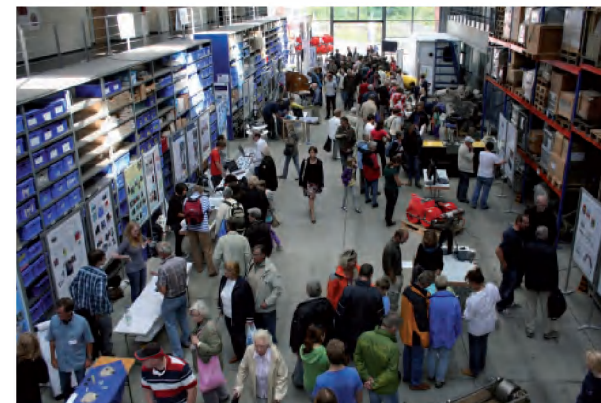
"Subduction experiment" presented by pupils during Open Ship on RV ALKOR.

board the RV LITTORINA;

- 20-24 June 2011: Kiel Week activities: traditional "Kiel Week Lectures" in collaboration with the cluster of excellence "Futze Ocean" (key focus: "Year of Health") and Open Ship on board the RV ALKOR (24 June 2011), visit from the President of the International Sailing Association at IFM-GEOMAR (23 June 2011);
- 11-14 July 2011: 3rd Summer School: "Marine Biotechnology" of the Kieler Wirkstoff-Zentrum (Centre for Marine Substances) at IFM-GEOMAR;
- 16-22 July 2011: 5th Summer School on Marine Geosciences for pupils;
- 21 July 2011: Opening of the permanent exhibition "Exploration and Use of the Seas" of the German Marine Consortium (KDM) at the OZEANEUM, Stralsund, with the support of IFM-GEOMAR;
- 28 August 2011: Open House, together with the Zentrum für Technologie und Seefischmarkt GmbH and the summer festival in the suburb of Wellingdorf. Approxi-



Lab practical with scientific advice during the 5. Summer School on Marine Geosciences.



Numerous visitors during the Open House at IFM-GEOMAR.

mately 3,000 visitors on the ALKOR, more than 10,000 at the Institute;

- 7 September 2011: Symposium commemorating the 20th anniversary of the North Pole Expedition ARCTIC-91;
- 30 September 2011: Participation in the Open Ship event in connection with the 25th anniversary of the RV METEOR in Hamburg;



Dr. Gerd Hoffmann-Wieck (Coordinator for exhibits) welcomed the Prime Minister of North Rhine-Westphalia, Hannelore Krafft in the exhibition in Bonn.

- 1-3 October 2011: Day of German Unity 2011 in Bonn: exhibition on marine research in Kiel together with the cluster of excellence "Future Ocean";
- 14 October 2011: Opening of the German-Russian exhibition on marine and polar



The German-Russian exhibition on marine and polar research in St. Petersburg.

research in St. Petersburg as part of the German-Russian Year of Education, Science and Innovation 2011/2012. Further exhibitions will be held in 2012 in Moscow, Bonn and Berlin;

- Preparation of contributions for exhibitions for the German Marine Consortium (Brussels, January 2012) as well as for the deep sea exhibition at the „Lokschuppen“ in Rosenheim (March to November 2012);
- Short film project: two new films: Subduction Zone off the Coast of Chile (SFB574) and on the topic of Black Smokers / Hydrothermal Systems were completed. Available via the IFM-GEOMAR website.



Scientific Highlights

A selection of short scientific reports in this section provides an overview on IFM-GEOMAR research activities and results throughout 2011. This encompasses summaries from major expeditions, interdisciplinary activities, technology development and scientific results. These are just a few highlights from the broad scope of marine research at IFM-GEOMAR.

- Deep jets in the deep equatorial Atlantic cause climate variability
- Enhanced Atlantic water inflow warms the Arctic
- Enhanced recycling of bioavailable nitrogen in sediments underlying the Peruvian oxygen minimum zone

- Trace gas emissions from tropical oceans influence the stratospheric ozone layer
- Ocean acidification affects early life stages of heavily exploited fish
- Does biological diversity matter for the stability of marine communities?
- Mass wasting and earthquakes – unexpected interrelations offshore Central Chile
- Deep-sea massive sulfide deposits may not represent a major resource potential

Deep jets in the deep equatorial Atlantic cause climate variability

Peter Brandt, Ocean Circulation and Climate Dynamics - Physical Oceanography
Richard Greatbatch, Ocean Circulation and Climate Dynamics - Theory and Modelling

Climate variability in the tropical Atlantic is affected by the ocean in many ways. Besides large-scale ocean-atmosphere interactions, it was found that the deep equatorial Atlantic also plays an important role in tropical climate. Equatorial deep jets that are generated in the deep ocean (perhaps as deep as several thousand meters) and propagate their energy toward the sea surface are found to affect sea surface temperature, wind, and rainfall in the tropical Atlantic region and constitute a 4 ½ -year climate cycle.

The dominant climate phenomenon in the tropical Atlantic is a north/south movement of the tropical rain belt, which on average extends from equatorial South America across the Atlantic to the southern part of West Africa. This rain band is caused by the convergence of the northeast and southeast trades and is commonly referred to as the Inter Tropical Convergence Zone. It moves with the sun to the north in early boreal summer and reaches its northernmost position in August. Then it moves back south as the season progresses. The associated rain areas are displaced not only over the ocean but also over continental Africa where they are referred to as the African monsoon. It is characterized by a two-time reversal of winds during the course of a year, leading to the formation of rainy and dry seasons. Despite the dominant annual cycle in the Atlantic, sub-Saharan Africa experiences strong multi-year to multi-decadal climate variability with great impact on water supply, agriculture, tropical diseases, and infrastructure of the respective countries.

While long-term, decadal and multi-decadal fluctuations may be associated with the general temperature gradient between the North and South Atlantic, for example due to changes in the meridional overturning circulation, year-to-year fluctuations may depend more on the surface temperature of the adjacent seas particularly the central and eastern equatorial Atlantic. With the appropriate prediction of sea surface temperatures, it would thus be possible, in principle, to forecast the rainfall, its starting date and strength, not only for the next rainy season but for the next few years as well – a tremendous benefit for the people living in these regions. The atmospheric and oceanic processes responsible for the change in sea surface temperature, however, are still not understood well enough to be implemented correctly in models to allow an accurate prediction of the African monsoon.

Oceanographers from IFM-GEOMAR, in collaboration with their colleagues from the Woods Hole Oceanographic Institution (WHOI, USA), are now able to demonstrate the existence

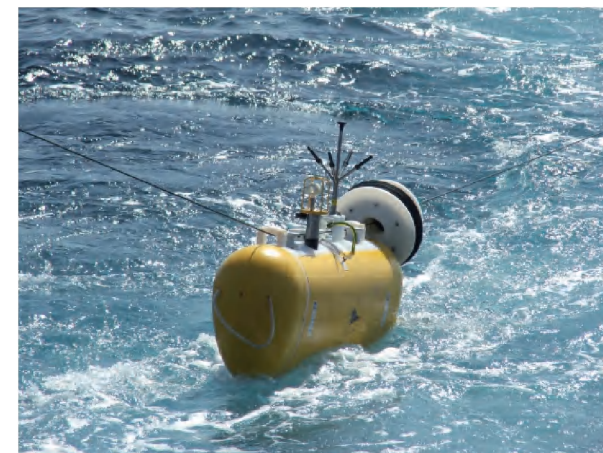


Figure 1: A "Profiler" is an instrument moored to the ocean floor by steel wire several km in length. The Profiler autonomously moves up and down the mooring wire between 1000 and 3500m depth, measuring currents, temperature, salinity and pressure along the way. Higher up on the mooring wire are additional instruments, such as acoustic current meters, temperature and salinity recorders. This entire platform allows us to continuously monitor the Atlantic at depth.

of regular interannual temperature fluctuations which have an effect on the rainfall of the region but cannot be traced back to previously known sources related to the large-scale ocean-atmosphere interactions.

As part of a multi-year international research programme, scientists involved in the Tropical Atlantic Climate Experiment (TACE) have attempted for many years to track the causes, effects and potential periodicities of

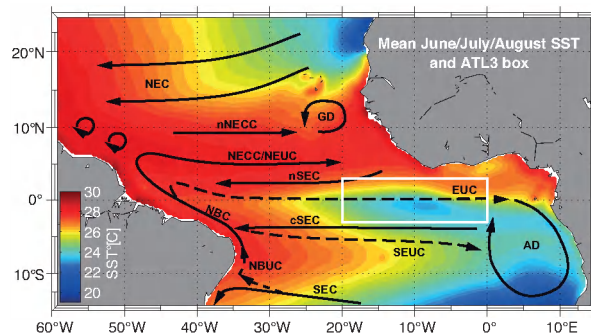


Figure 2: Sea surface temperature is one of the determining factors for rainfall fluctuations over West Africa. For example, if the equatorial cold water tongue in the Gulf of Guinea forms particularly early during the boreal summer months, the likelihood of early rainfall over West Africa is high. If the cold water tongue remains relatively warm, the onset of rainfall over land is delayed, but the rainfall itself will be heavier. After Brandt et al., 2011.

climate fluctuations in the tropical Atlantic. The German contribution to this programme, supported by the Federal Ministry of Education and Research ("Nordatlantik" project) and the German Science Foundation (as part of the Kiel Special Research Project SFB754 "Climate - Biogeochemical Interactions of the Tropical Oceans") includes deep-sea moorings along the equator. These moorings consist of several km of mooring wire held upright in the water column by flotation and buoys. Instruments are mounted along the wire to continuously record current speed and direction, salinity and temperature, thereby allowing the observation of long-term changes in the deep ocean. Furthermore, data on ocean currents is also available from freely drifting deep-sea buoys (the so-called Argo floats) and on the sea surface and the atmosphere

from various satellite-based sensors. The time series obtained over the past ten to twenty years have revealed previously unknown fluctuations of currents and temperatures at the surface of the tropical Atlantic which have a regular cycle of 54 months, or 4 ½ years. The 4 ½ cycle at the surface is connected to fluctuations in ocean currents that are observed throughout the water column down to 3000 m depth with speeds of 10-20 cm/sec known as the "Equatorial Deep Jets". These jets flow along the equator, crossing the entire Atlantic, with flow reversals every few hundred meters in depth. The jets are generated in the deep ocean, and their energy apparently propagates upwards through the water column. Once near the surface, their energy affects currents and temperatures leading to the 4 ½ year cycle that influences the atmosphere.

Up to now, state-of-the-art high-resolution ocean models are not able to simulate the generation and propagation of equatorial deep jets in a realistic way. Ongoing research at GEOMAR includes continuing the measurements in the equatorial Atlantic that are required to describe the long time scales involved, as well as process modelling designed to develop understanding of the dynamical nature of these peculiar features of the equatorial ocean. The goal of this research is to include the effect of equatorial deep jets in climate models, either by parameterizing or direct simulation, in order to facilitate more reliable predictions of tropical climate variability in the future.

References

- Brandt, P., Funk, A., Hormann, V., Dengler, M., Greatbatch, R.J., and Toole, J.M., 2011: Inter-annual atmospheric variability forced by the deep equatorial Atlantic Ocean. *Nature*, **473** (7348), 497-500. DOI 10.1038/nature10013.

Enhanced Atlantic water inflow warms the Arctic

Robert Spielhagen, Kirstin Werner and Evguenia Kandiano,
Ocean Circulation and Climate - Paleoceanography

Never in the last 2,000 years was the Atlantic Water entering the Arctic in the Fram Strait between Greenland and Svalbard as warm as today. This was revealed by a study of marine sediments from the western Svalbard continental margin which was led by researchers from IFM-GEOMAR.

The Arctic region is responding to global warming more rapidly than other areas on earth. The only ca. 2 m thick sea ice cover has shown a dramatic decrease in areal extent in the last three decades of satellite observations. It is expected to disappear in summer in the second half of the 21st century, provided continuous warming. Compilations of circum-Arctic terrestrial climate data series from tree rings, ice cores etc. have shown that modern atmospheric temperatures in the Arctic are unprecedented in the last 2000 years and have reversed a long-term cooling trend (Kaufman et al., 2009). The variability of oceanic heat flux to the Arctic on such times scales, however, had remained unknown due to the lack of available high-resolution marine sedimentary archives from the Arctic.

Suitable sedimentary archives which truthfully record oceanic changes on times scales of decades can be found only in areas of unusually high deposition rates, e.g., near the mouths of large rivers. Similar conditions can be found on Arctic continental margins where fine-grained sediments are exported

from partly glaciated fjords. In August 2007, an international geoscientific working group led by scientists from IFM-GEOMAR surveyed the western continental margin off Svalbard (Spitsbergen) with the German research vessel Maria S. Merian. Here, in the eastern part of the >2,500 m deep Fram Strait between Greenland and Svalbard, relatively warm (6-7°C in summer) and saline water masses from the North Atlantic enter the Arctic (Fig. 1). This current, the northernmost extension of the so-called "Gulf Stream", provides ice-free conditions in the waters west of Svalbard even in winter. The working group found sheltered places on the sea floor where fine-grained material from Svalbard fjords could settle due to diminished bottom currents. Long and short sediment cores were obtained in such places and analyzed later in the laboratories of IFM-GEOMAR and institutions in Tromsø (Norway) and Boulder (USA) for various paleoclimatic proxies. Ages of the sediment layers could be assigned based on radiocarbon datings of calcareous microfossils found in the sediments.

A major success of the work was the recon-

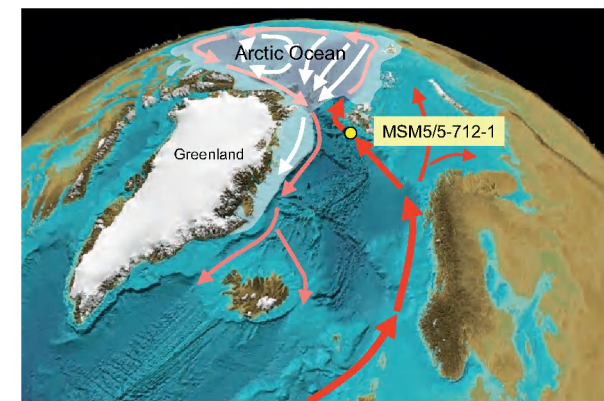


Fig. 1: Atlantic Water flow (red arrows) from the North Atlantic to the Arctic Ocean and ice drift (white arrows) in the Arctic. Pink arrows show subsurface recirculation of Atlantic Water. The yellow circle marks the site where the analyzed sediment core was obtained.

struction of summer water temperatures for the last 2,000 years of the Atlantic Water entering the Arctic Ocean (Spielhagen et al., 2011; Fig. 2). The team used specific foraminifers from a sediment core as a paleothermometer. These protozoans live in water depths of 50 to 200 m and build calcareous shells. When they die, the shells sink and accumulate on the sea floor together with other particles. Because specific foraminiferal species prefer specific water temperatures, the species associations in sediment samples of a known age can be used to determine past oceanic and climatic conditions. In addition, the group analyzed the Magnesium/Calcium ratio of the calcareous shells which also allows reconstructing the water temperature

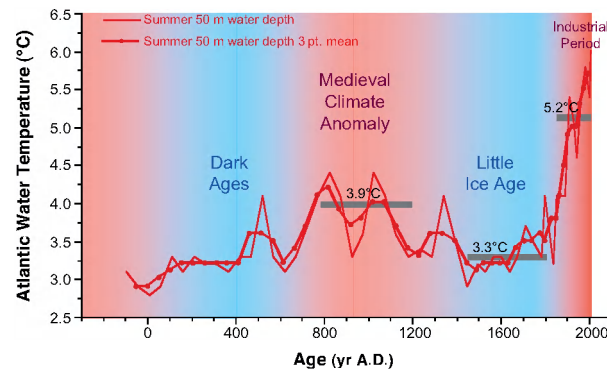


Fig. 2: Temperature reconstruction of Atlantic Water entering the Arctic Ocean over the last ca. 2,000 years. Bluish and reddish background colors mark cool and warm climatic periods, respectively.

in which the foraminifers lived. Using these two independent methods, it was found that there were several warmer and cooler intervals in the Fram Strait during the past 2,000 years. Temperatures of the northward inflowing Atlantic Water had varied several tenths of a degree Celsius in the past 2,000 years (Fig. 2). It was especially cold during the 'Little Ice Age' from the mid-15th to the late 19th century, followed by a dramatic temperature increase of approximately 2°C, which was unprecedented in the past 2,000 years. This warming of the Atlantic Water significantly differed from all climate variations in the past 2,000 years. As a result, modern temperatures of the Atlantic Water in the Fram Strait are approximately 1.5 degrees Celsius higher than even during the climatically warm Medieval Period.

To obtain further information about the impact of variable water temperatures on the sea ice

cover in the Fram Strait, the isotopic composition of the calcareous foraminifer shells was analyzed at IFM-GEOMAR. The results indicate that the perennially ice-free conditions off Svalbard are a relatively young feature (Werner et al., 2011). During most of the last 2,000 years the study area has been covered by sea ice at least in winter.

The results from the Fram Strait indicate that the accelerated decrease of the Arctic sea ice cover and the warming of ocean and atmosphere in the Arctic, as measured during the past decades, are in part related to an increased heat transfer from the Atlantic. A lack of sea ice amplifies climate change in the Arctic because sunlight is no more reflected by the ice. Instead, solar energy is absorbed by the ocean water ("ice-albedo effect") and in part released as heat to the atmosphere. The new findings support results from another study performed by IFM-GEOMAR scientists, together with Russian colleagues within the project "Laptev Sea System" in the Russian Arctic (Dmitrenko et al., 2010). Their data suggest that the warm Atlantic Water layer on the Siberian shelf of the Laptev Sea is found in significantly shallower waters than in the 80 years before. A further warming and extension of the Atlantic Water layer in the Arctic can have dramatic consequences for the sea ice formation and sea ice coverage in the Arctic Ocean.

References

Dmitrenko, I.A., Kirillov, S.A., Tremblay, L.B., Bauch, D., Hölemann, J.A., Krumpen, T., Kassens, H., Wegner, C., Heinemann, G., and

Schröder, D., 2010: Impact of the Arctic Ocean Atlantic water layer on Siberian shelf hydrography. *J. Geophys. Res.*, **115**, C08010.

Kaufman, D.S., Schneider, D.O., McKay, N.P., Ammann, C.M., Bradley, R.S., Briffa, K.R., Miller, G.H., Otto-Bliesner, B.L., Overpeck, J.T., Vinther, B.M., and Arctic Lakes 2k Project Members, 2009: Recent warming reverses long-term Arctic cooling. *Science*, **325**, 1236-1239.

Spielhagen, R.F., Werner, K., Sørensen, S.A., Zamelczyk, K., Kandiano, E., Budeus, G., Husum, K., Marchitto, T.M., and Hald, M., 2011: Enhanced modern heat transfer to the Arctic by warm Atlantic Water. *Science*, **331**, 450-453.

Werner, K., Spielhagen, R.F., Bauch, D., Hass, H.C., Kandiano, E., and Zamelczyk, K., 2011: Atlantic Water advection to the eastern Fram Strait - multiproxy evidence for late Holocene variability. *Palaeogeogr., Palaeoclimatol., Palaeoecol.*, **308**, 264-276.

Enhanced recycling of bioavailable nitrogen in sediments underlying the Peruvian oxygen minimum zone

Lisa Bohlen, Stefan Sommer - Marine Biogeochemistry - Marine Geosystems

Oxygen minimum zones (OMZ) are key regions for pelagic and benthic nitrogen turnover. During Meteor cruise M77-1/2, conducted within the SFB 754, the shelf and upper slope sediments off Peru were identified as major recycling sites for bioavailable nitrogen. This is in strong contrast to the common perception that continental margin sediments in upwelling regions generally represent a major sink for bioavailable nitrogen releasing dinitrogen gas, N_2 , into the environment.

As part of the SFB 754 "Climate - Biogeochemistry Interactions in the Tropical Ocean", redox-sensitive sedimentary nitrogen (N) cycling was extensively studied along a transect traversing the Peruvian oxygen minimum zone (OMZ) at 11° S. This transect covered the transition from anoxic bottom water conditions to low oxygen concentration of around 40 μM (Fig. 1). As a limiting element for biological productivity, the availability of dissolved inorganic nitrogen, DIN, (nitrate, NO_3^- ; nitrite, NO_2^- and ammonium, NH_4^+) occupies a central role in ocean biogeochemistry, exerting a significant influence on cycles of many other elements, in particular carbon. While DIN, also known as fixed nitrogen, can generally be taken up by phytoplankton, dinitrogen gas (N_2) is only accessible for a small group of nitrogen fixing organisms called diazotrophs. Hence, the balance of DIN removal and production is linked to primary production and carbon cycling with its availability controlling not only the productivity of the oceans but also the seques-

tration of carbon dioxide from the atmosphere. Due to the redox-sensitivity of many processes involved in the marine N cycle a globally significant proportion of N turnover proceeds in the relatively restricted areas of the world ocean OMZs.

Marine sediments have been perceived to represent a main sink for DIN (e.g. Gruber, 2004) with denitrification and anammox representing the main processes. During denitrification organic matter is decomposed using nitrate as electron acceptor instead of oxygen (O_2), during the recently discovered anammox pathway NH_4^+ is oxidized using NO_2^- . Both processes convert DIN into N_2 and thus lead to a loss of bioavailable N. Denitrification and anammox are generally inhibited by O_2 . Hence, these processes are restricted to areas where O_2 concentrations are very low such as in OMZs or reactive sediments where O_2 only penetrates a few millimeters deep into the sediment.

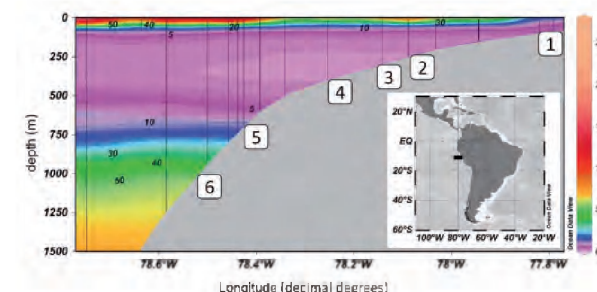


Fig. 1: Cross-section of oxygen concentrations (μM) on the shelf and slope of the Peruvian OMZ at 11° S. The vertical lines denote the CTD casts where O_2 measurements were made during cruise M77 leg 1. Station locations 1 to 6 for benthic studies are indicated.

In order to determine to what extent the sediments underlying the Peruvian OMZ serve as a sink for bioavailable N, DIN fluxes across the sediment water interface were measured *in situ* at six stations along the transect using benthic landers (Fig. 1). With regards to the net flux of DIN the transect can be separated into two sections. At the slope stations 3 to 6 the uptake of $\text{NO}_3^- + \text{NO}_2^-$ was higher than the release of NH_4^+ and the sediments represented a net sink for DIN. However, at the shelf and the upper slope (station 1 and 2) uptake of $\text{NO}_3^- + \text{NO}_2^-$ almost balanced release of NH_4^+ indicating strong recycling of bioavailable N. This finding is in great contrast to the common belief that OMZ sediments represent major sinks (e.g. Middelburg et al., 1996; Devol and Christensen, 1993). At the shelf



Fig. 2: Bacterial mats (white) on the sediment surface at the Peruvian shelf. The length of the ground-weight is 20 cm.

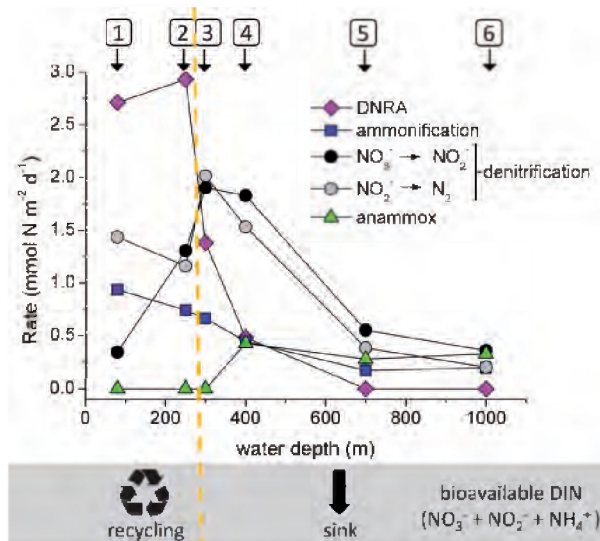


Fig. 3: Model-predicted depth-integrated rates of nitrogen turnover along the 11°S transect. Station numbers are indicated by the arrows at the top. The dashed line denotes the shift from DNRA to denitrification as the major N-turnover process.

and upper slope extended mats of giant sulfur bacteria such as *Beggiatoa* and *Thioploca* were observed (Fig. 2). These organisms can store high amounts of NO_3^- in their cells to oxidize sulfide and thereby release NH_4^+ . This process is termed dissimilatory nitrate reduction to ammonium (DNRA). In contrast to denitrification and anammox, DNRA retains bioavailable N in the ecosystem and opposes the “self-cleaning” effect of denitrification and anammox.

To resolve the different N turnover processes the *in situ* DIN fluxes as well as measured porewater concentration profiles were used to constrain a 1-D reaction-transport model (Bohlen et al., 2011). The model allows a detailed simulation of the N cycle including simultaneous two-step denitrification and nitrification, DNRA, and anammox. Results show that the relative importance of the different N turnover processes distinctively changes along the transect (Fig. 3). At stations 1 and 2, DNRA indeed governed N turnover and accounted for more than half of the benthic $\text{NO}_3^- + \text{NO}_2^-$ uptake. At greater water depth, denitrification became dominant and the sediments turn into a sink for DIN. Anammox was of minor importance on the shelf and upper slope yet contributed up to 62% to total N_2 production at the deepest station.

These new findings illustrate that OMZ sediments do probably not remove as much bioavailable N as previously thought. High rates of DIN recycling by DNRA counteract the overall loss of bioavailable N from the system. Consequently, the role of OMZ sedi-

ments as strong sinks for DIN need to be revised. Moreover, strong NH_4^+ release potentially stimulates primary production and O_2 consumption in the water column. Such a positive feedback mechanism maintains or even promotes further expansion of OMZs (Stramma et al., 2008).

References

- Bohlen, L., Dale, A.W., Sommer, S., Mosch, T., Hensen, C., Noffke, A., Scholz, F. and Wallmann, K., 2011: Benthic nitrogen cycling traversing the Peruvian oxygen minimum zone. *Geochim. Cosmochim. Ac.*, **75**, 6094-6111.
- Devol A.H., and Christensen, J.P., 1993: Benthic Fluxes And Nitrogen Cycling In Sediments Of The Continental-Margin Of The Eastern North Pacific. *J. Mar. Res.*, **51**, 345-372.
- Gruber N., 2004: The dynamics of the marine nitrogen cycle and its influence on the atmospheric CO_2 variations. In *The Ocean Carbon Cycle and Climate* (eds. Follows M. and Oguz T.). NATO ASI Series, 97-148.
- Middelburg, J.J., Soetaert, K., Herman, P.M.J. and Heip C. H.R., 1996: Denitrification in marine sediments: A model study. *Global Biogeochem. Cy.*, **10**, 661-673.
- Stramma, L., Johnson, G.C., Sprintall, J. and Mohrholz, V., 2008: Expanding oxygen-minimum zones in the tropical oceans. *Science*, **320**, 655-658.

Trace gas emissions from tropical oceans influence the stratospheric ozone layer

Birgit Quack – Marine Biogeochemistry - Chemical Oceanography

Kirstin Krüger – Ocean Circulation and Climate Dynamics - Marine Meteorology

The halogens chlorine, bromine and iodine are highly efficient at destroying atmospheric ozone. Rising concentrations of these compounds from human activities have led to depletion of global stratospheric ozone over the last decades, and formation of the Antarctic "ozone hole". Whereas the chlorine supply is dominated by anthropogenic emissions, a major part of the bromine and iodine is supplied by short-lived organic trace gases with oceanic sources, entering the stratosphere principally in the tropics. The Western Pacific is a projected hot spot area for both oceanic sources and stratospheric entrance region of the trace gases. In order to reduce uncertainties in the amount of naturally emitted halogen-containing compounds reaching the stratosphere and the resulting ozone depletion, a large campaign was performed in the western Pacific, combining measurements from the German research vessel SONNE, the German research aircraft DLR-FALCON as well as land and space-based platforms.

Since the 1970s it is known that gases containing chlorine and bromine emitted by human activities deplete stratospheric ozone. 200 nations committed themselves to limit and abandon the emissions of the industrially produced chlorofluorocarbons (CFC) in the Montreal Protocol in 1989. Their goal to protect the ozone layer, close the existing ozone hole and therewith decrease UV radiation at the surface is underway, although the ozone hole and durable CFCs still exist in the stratosphere. In concert with climate change the future development of the ozone layer is very uncertain, not least because the contribution of natural halogenated compounds to the destruction of ozone is hardly known. Strong sources of brominated and iodinated organic compounds for the atmosphere are found in the oceans. Regionally enhanced phytoplank-

ton and photochemical reactions in the open ocean and macro algae as well as anthropogenic sources in coastal regions are known contributors to the highly variable marine and atmospheric concentrations of substances such as bromoform (CHBr_3), dibromomethane (CH_2Br_2) and methyl iodide (CH_3I).

Their highly variable oceanic emissions cause major uncertainties in the contribution of the natural sources to stratospheric halogens and therewith ozone depletion. A good spatial and temporal resolution of emissions and the understanding of their variability are needed for an accurate climate-ozone-interaction modeling. This includes the resolution of gradients between coastal, near-shore and open ocean emissions, the revelation of the diversity of emissions in variable environ-



Figure 1: The research aircraft FALCON from the DLR measures and follows air masses that have been investigated on the SONNE (21. November 2011).

ments and their controls, as well as the magnitude of global air sea fluxes and the possible effects of climate change on the fluxes.

The tropical oceans have been identified as potentially important source regions for various halogenated trace gases, where marine emissions have the potential to enter the stratosphere due to rapid uplift of surface air to the tropical tropopause layer in form of deep convection. Especially the tropical western Pacific is a largely uncharacterized region for the oceanic compounds, where the research cruise SO218 of the German research vessel SONNE was conducted by the Chemical Oceanography in cooperation with the Marine Meteorology research unit. From 15 to 29 November 2011 an international crew of European, Malaysian and Philippine scientists investigated the South China and Sulu Sea within the frame work of the EU-



Figure 2: Local Malaysian research boats meet RV Sonne for the exchange of water and air samples off the coast of Borneo (19./21. November 2011).

project SHIVA (Stratospheric ozone: Halogen Impacts in a Varying Atmosphere; <http://shiva.iup.uni-heidelberg.de>).

The instruments on board made quasi-continuous measurements of a suite of trace gases in both seawater and air to determine actual sea to air fluxes. The atmospheric structure was determined by intense radio and ozone sounding and in situ and satellite measurements of phytoplankton groups informed about biogeochemical conditions during the ship expedition.

The research during the cruise was coordinated with research flights of the Falcon Aircraft (Figure 1) from the German Aerospace Center's (DLR) which was stationed in Miri on Borneo for this project. The air craft over passed the ship several times and its atmos-

pheric sampling started at the same height as the ship measurements and followed the same air masses up to an altitude of 13 km. In order to obtain near-coastal samples, which were analyzed on board the SONNE for their trace gas and plankton content, meetings with coastal research cruises from our Malaysian partners were organized and successfully conducted in the open ocean (Figure 2),

First results show generally enhanced concentrations of brominated and iodinated trace gases in the water, being very high in some shallow shelf-regimes and close to the coasts (Figure 3), while the atmospheric abundances were generally rather low. Strong oceanic emissions with rapid dilution in the atmosphere indicate that the cruise region comprises major source areas of biogenic halogen compounds capable of damaging the stratospheric ozone layer. Measurements and models indicate that the vertical transport in

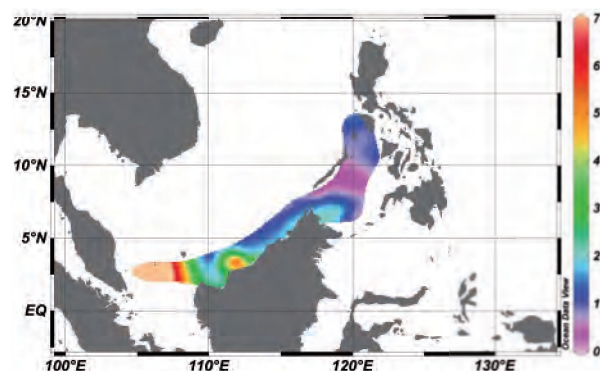


Figure 3: Concentrations (pmol/L) of Bromoform (CHBr_3) in surface water of the South China and Sulu Sea.

large tropical thunderstorms is a very important factor for the transport of the ozone relevant gases into the upper tropical troposphere, from where these gases may reach the lowermost stratosphere.

The results of the SHIVA-SONNE campaign about the natural and oceanic sources of ozone depleting substances will help to better predict the rate, timing and climate sensitivity of ozone-layer recovery in response to the decline of the industrial "ozone killers" like chlorofluorocarbons (CFC) which interact with the oceanic halogenated organic trace gases. Further spatial and temporal wide measurements of the biogenic compounds containing chlorine, bromine and iodine are needed in order to provide a profound surface forcing for simulations of the future development of the ozone layer incorporating these natural sources of halogens under the influence of anthropogenic change.

Ocean acidification affects early life stages of heavily exploited fish

Catriona Clemmesen, Andrea Frommel, Rommel Maneja, Andrea Franke, Uwe Piatkowski, Thorsten Reusch – Marine Ecology - Evolutionary Ecology of Marine Fishes

Ocean acidification (OA) and its effects on fish have recently come into focus. Early developmental stages, in particular, are sensitive to OA because they lack efficient osmoregulation. Our experiments indicate severe damages in major organs in Atlantic cod during the transition from the larval to the juvenile stage, and showed differences in sensitivities of different populations of Atlantic cod (Baltic vs. Northeast Atlantic). OA may constitute an additional bottleneck in the life cycle of fish potentially causing mortality and affecting the recruitment to fisheries.

Ocean acidification the “other CO₂ problem” is presently considered to be one of the most complex and critical anthropogenic threats to marine life. It is caused by the uptake of excess atmospheric CO₂ by the oceans, reducing not only the pH of surface seawater but also the mid and bottom waters due to CO₂-remineralization by decomposition of primary plankton production. Ocean acidification has been found to affect a wide array of organisms from single-celled algae to complex invertebrates. While calcifying organisms are particularly challenged by acidified waters, fish are considered less vulnerable as they have a well developed acid-base regulatory system in the gills. However, early life stages that hatch without functional gills may be more vulnerable to high CO₂ concentrations. Ocean acidification data on marine fish remain limited, negative effects so far have been identified in the behavior of coral reef fishes and in an estuarine fish species, the Atlantic silversides with reduced growth and increased mortality in the early larval stages

(Baumann et al. 2012). In coral reef fish realistic CO₂ levels predicted by global climate models for the near future impaired their olfactory ability for homing, while predator and prey detection was also compromised. In contrast, no significant effects on embryonic duration, egg survival and size at hatch for these reef fish, but on the size of the otoliths, the earstones of the fish, were found (f.e. Munday et al., 2009).

Hence, we intended to address ocean acidification effects in Atlantic cod, a key fish species which is heavily exploited in the entire northern Atlantic. Experiments were performed in large land-based outdoor mesocosms (Fig. 1) under natural temperature, salinity and light conditions near Bergen, Norway using natural plankton from the nearby fjord as food for the larvae. The Atlantic cod is widely distributed along the entire North Atlantic coast. It matures at 3 – 5 years. Its reproduction is characterized by high fecundity with an average of 1 million eggs per female and fluctua-



Fig.1: Mesocosm set up at Espesgrend, Norway.

tions in recruitment (stage where fish enter the fisheries) are mainly caused by high mortality during the early life stages. Cod are external fertilizers and their sperm is activated by changes in ionic composition and osmolality as it is expelled into the open ocean during a spawning event. Therefore reduction in seawater pH has the potential to influence sperm behavior and fertilization success. By examining the effect of elevated CO₂ concentrations over the entire early life-history range from gametes to the juvenile stage, vulnerable stages could be defined. While gametes and yolk-sac larvae seem to be robust to very high levels of CO₂, (Frommel et al., 2010, 2012a) the transition from larvae to juveniles was heavily impacted by CO₂ (Frommel et al., 2012b). At this developmental stage, severe damage to internal organs (liver, pancreas, kidney and gut) in larvae raised under ocean acidification scenarios was found based on histological sectioning (Fig. 2). This transi-

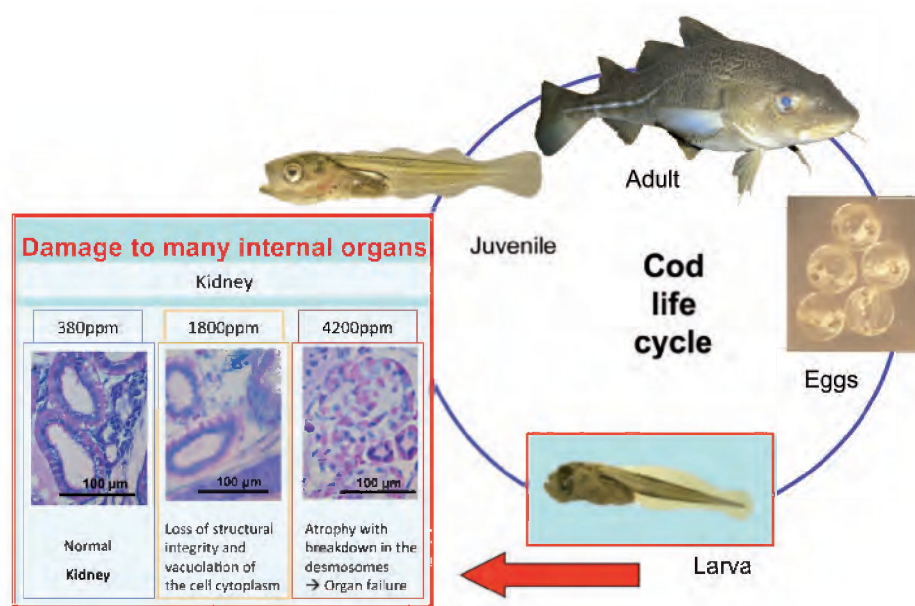


Fig. 2: The life cycle of cod showing an example of damage to one of the organs (kidney) occurring in the transition phase between larval and juvenile stage.

tion marks a particularly vulnerable phase in which structural reorganization like the development of functional gills takes place, lowering the chance of larval survival considerably. Additionally, changes in lipid metabolism were observed (Frommel et al., 2012b).

One has to be very careful when extrapolating results from our findings, measured in one population at one time point, to the species or even genus level. Different cod populations may experience very different environmental conditions rendering them more or less sensitive to climate change. Atlantic cod populations along the Norwegian coast live in full saline and well oxygenated water. In con-

trast, Baltic cod spawn in oxygen depleted water layers and naturally experience CO₂ levels predicted for the year 2100 in other areas (global, open ocean average). Therefore Baltic cod may be adapted to chronically elevated CO₂ levels, since the non-feeding stages of Baltic cod larvae were insensitive to elevated CO₂ levels (Frommel et al., 2012a). Similar results were obtained for herring larvae from the western Baltic Sea which showed no effect of ocean acidification on the embryonic development, hatch rate and size, and weight at hatch. The RNA concentration, as a proxy for protein biosynthesis, was reduced at higher CO₂ levels possibly indicating an energy deficiency (Franke & Clemmesen, 2011). An evolutionary ecology perspective is thus indispensable to understand biological effects of global warming and acidification on fish populations. Multiple hydrographical stressors in the Baltic Sea may also lead to a higher sensitivity in later stages, which so far have not been studied. Effects of ocean acidification on the survival of these stages, as indicated by the results from our working group, must be further analysed in combination with other

relevant climate change variables to ensure a better projection of the effects of ocean acidification on fish populations. Furthermore, species that already experience strong pressure via fisheries exploitation have a reduced buffering capacity towards climate change aspects.

References

- Baumann, H., Talmage, S.C., Gobler, C.J., 2012: Reduced early life growth and survival in a fish in direct response to increased carbon dioxide. *Nature Climate Change*, **2**, 38-41.
- Franke, A., Clemmesen, C., 2011: Effect of ocean acidification on early life stages of Atlantic herring (*Clupea harengus* L.). *Biogeosciences*, **8**, 3697-3707.
- Frommel, A.Y., Schubert, A., Piatkowski, U., Clemmesen, C., 2012a: Egg and early larval stages of Baltic cod, *Gadus morhua* are robust to high levels of ocean acidification. *Mar. Biol.*, DOI 10.1007/s00227-011-1876-3
- Frommel, A.Y., Maneja, R., Lowe, D., Malzahn, M., Geffen, A.J., Folkvord, A., Piatkowski, U., Reusch, T.B.H., Clemmesen, C., 2012b: Severe tissue damage in Atlantic cod larvae under increasing ocean acidification. *Nature Climate change*, **2**, 42-46, DOI: 10.1038/NCLIMATE 1324
- Frommel, A., Stiebens, V., Clemmesen, C., Havenhand, J., 2010: Effect of ocean acidification on marine fish sperm (Baltic cod: *Gadus morhua*). *Biogeosciences*, **7**, 1-5.
- Munday, P.L., Dixon, D.L., Donelson, J.M., Jones, G.P., Pratchett, M.S., Devitsina, G.V., Doving, K.B., 2009: Ocean acidification impairs olfactory discrimination and homing ability of a marine fish. *PNAS*, **106**, 1848-1852

Does biological diversity matter for the stability of marine communities?

Martin Wahl, Marine Ecology - Experimental Ecology

Species are being irreversibly lost at an unprecedented pace. Will this de-stabilize communities, i.e. make them more vulnerable to stress and global change? In a global-scale approach involving more than 500 benthic communities in 8 biogeographic regions we show that species richness stabilizes communities when functional diversity is low, but tends to destabilize communities when functional richness is high. Given the decrease of functional richness in benthic hard bottom communities from the tropics towards the poles, we expect a more severe impact of species loss at higher latitudes.

A variety of metrics have been used when assessing “biodiversity”. Species richness is certainly the most commonly used metric but also one of the most controversial ones. Thus, despite intense biodiversity research over the past decades, the role of species richness for the performance and stability of communities is still highly controversial. Recent reviews have shown that richness may stabilize or destabilize communities, and enhance or decrease their susceptibility to abiotic stress or biotic invasions (Balvanera et al., 2006, Romanuk et al., 2009, Valdivia & Molis, 2009).

Likely causes for the contradictory findings about the role of diversity are the use of different diversity metrics, differences in the biological and geographical properties of the systems investigated, in the pressures applied and responses measured, in the number of trophic levels considered, and in the duration of the experiments (Wahl et al., 2011). To avoid the weaknesses of previous

studies we decided to work on “standardized” (same size, same age) natural communities, expose them to a natural environmental shift, allow sufficient time for a community level response (compositional stability), assess two important aspects of diversity simultaneously (species richness and functional diversity), and replicate the experiments at an unprecedented scale (500 communities in 8 biogeographic regions world-wide, Fig. 1).

Shortly, communities of sessile invertebrates and algae (Fig. 2) which had assembled on artificial substrata were transplanted between two moderately different sites within each region simulating environmental shift. As a response to this pressure, some species decreased, others increased in abundance, and new species invaded the community. The rate of this re-organization was used as a measure for the structural instability of communities under stress.



Fig. 1: The biogeographic regions covered in this investigation were (1) South East Pacific (Chile), (2) South West Atlantic (Brazil), (3) North Sea (England), (4) Baltic Sea (Finland), (5) West Pacific (Malaysia), (6) North West Pacific (Japan), (7) South West Pacific (New Zealand), and (8) Tasman Sea (Australia).

The substantial effort invested into this study was rewarded by a consistent and interesting response pattern which explains a major part of the past controversy. Briefly, (i) at a global scale, more diverse ecosystems are not more stable at the community level than less diverse regions; at the regional scale (ii) functional diversity has important indirect effects on stability while (iii) species richness has important direct effects which, however, may be stabilizing or de-stabilizing. (Functional diversity in this context is defined as the number of “ecologically different” groups in the communities, i.e. species which differ in regard to body size, growth form, feeding type or coloniality, each of which represents

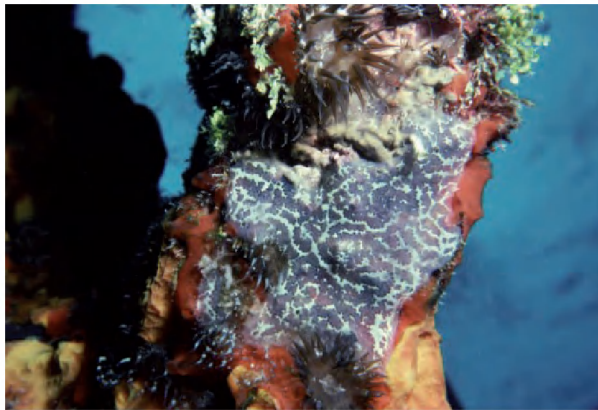


Fig. 2: Examples for tropical (A) and temperate (B) hardbottom communities.

a compound trait including other properties such as longevity or mode of reproduction.)

Community stability increased with species richness when functional diversity was low, but tended to decrease with species richness when functional diversity was high (Fig. 3). For a better understanding let us look at the two extremes of this gradient: Many

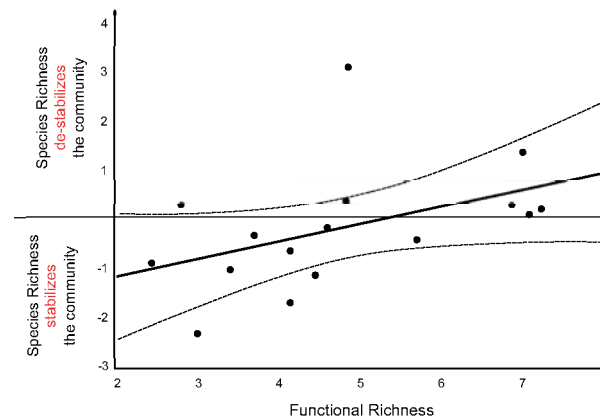


Fig. 3: Gradual change of the species diversity-stability-relationship from communities with low functional richness to communities with high functional richness. Values on the y-axis give the slope of the relationship between structural change and species richness. When values are negative, the rate of change driven by mortality and invasions decreases with species richness, i.e. structural stability increases with species richness.

species in communities with few functional groups leads to high functional redundancy: given ecological functions are represented by several species. Few species in communities with many functional groups leads to high complementarity: most species differ from each other ecologically. The two drivers of the re-organization process were mortality and bioinvasion. High functional diversity is considered an insurance against invasions because the invader is unlikely to find an unoccupied niche. Consequently, high redundancy in communities with reduced functional diversity warrants that the (few) functional groups are preserved even when single species are lost. At high functional diversity this important role of species richness is less crucial.

Our data show further that communities are functionally richer at low latitudes. Thus, the ongoing loss of species may have more severe consequences for community stability in temperate or polar regions than in tropical regions.

References

- Balvanera, P., Pfisterer, A.B., Buchmann, N., He, J.S., Nakashizuka, T., Raffaelli, D., Schmid, B., 2006: Quantifying the evidence for biodiversity effects on ecosystem functioning and services. *Ecol. Lett.*, **9**, 1146–1156.
- Romanuk, T.N., Vogt, R.J., and Kolasa, J., 2009: Ecological realism and mechanisms by which diversity begets stability. *Oikos*, **118**, 819–828.
- Valdivia, N. and Molis, M., 2009: Observational evidence of a negative biodiversity-stability relationship in intertidal epibenthic communities. *Aquat. Biol.*, **4**, 263–271.
- Wahl, M., Link, H., Alexandridis, N., Thomason, J.C., Cifuentes, M.J., Costello, M., da Gama, B.A.P., Hillock, K., Hobday, A.J., Kaufmann, M.J., Keller, S., Kraufvelin, P., Krüger, I., Lauterbach, L., Antunes, B.L., Molis, M., Nakaoka, M., Nyström, J., bin Radzi, Z., Stockhausen, B., Thiel, M., Vance, T., Weseloh, A., Whittle, M., Wiesmann, L., Wunderer, L., Yamakita, T., Lenz, M., 2011: Re-structuring of marine communities exposed to environmental change: a global study on the interactive effects of species and functional richness. *PLoS ONE*, **6**(5), e19514, DOI:10.1371/journal.pone.0019514.

Deep-sea massive sulfide deposits may not represent a major resource potential

Sven Petersen, *Dynamics of the Ocean Floor - Magmatic and Hydrothermal Systems*

The ocean floor, covering 70 % of our planet, is increasingly seen as a valuable potential resource for mineral and energy supply. Gravel, sand and hydrocarbons have been exploited from the ocean floor for many years. In addition, diamonds, gold, tin, and other minerals that were transported to the coastal ocean from the continents are being mined from shallow-water and beach areas. Efforts to expand ocean mining into deep-ocean areas have recently begun and we will likely see exploitation of massive sulfides formed at black smokers by the year 2014. However, fundamental data on the distribution, size, and grade of these deep-ocean massive sulfide deposits is still lacking and therefore the resource potential of this commodity is largely unknown.

The discovery of submarine hydrothermal venting in 1977 started a period of intensive seafloor exploration for hydrothermal activity and related mineral deposits. Because the ocean floor covers more than 70% of the Earth's surface, many expect the oceans to contain a proportionate amount of the world's mineral resources, comparing the resource potential of seafloor massive sulfide deposits to that of ancient deposits that are now mined on land and are important producers for zinc, copper, and gold. The rising metal prices enhance the possibility of mining seafloor massive sulfides, which has stirred debate about the sustainable use of this resource and whether its development is worth the risk. While currently only a few commercial companies are exploring the exclusive economic zones throughout the world's oceans, an increasing number of countries such as Russia, China, Korea, USA, but also France, Portugal and Germany are becoming more and more interested in this

resource and are actively exploring at sea. Recently, China and Russia acquired large sulfide exploration license areas from the International Seabed Authority in the open ocean. Among the outstanding questions are, however, how many deposits might actually be there and what is their resource potential.

Since large parts of the world's spreading centers are not explored at all, geologists from the University of Ottawa (Canada), the Colorado School of Mines (USA), GEOMAR, and Woods Hole Oceanographic Institution (WHOI, USA) have used a growing global database of seafloor hydrothermal systems and gathered detailed information on the number, distribution, and size of known sulfide deposits in order to extrapolate the abundance of seafloor massive sulfides in the neovolcanic zones of the global oceans and their resource potential.

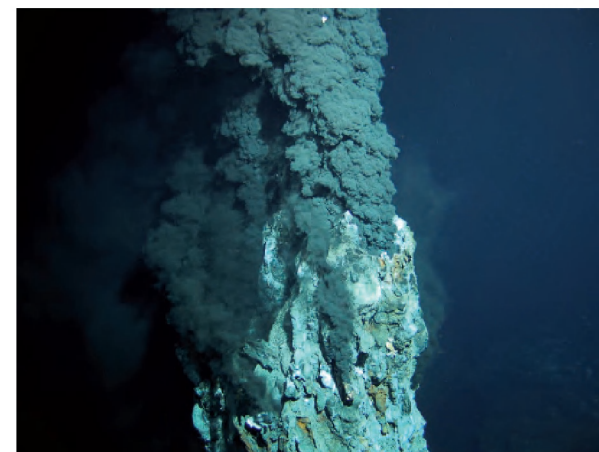


Fig. 1: Black smoker at the slow-spreading Mid-Atlantic Ridge, an important exploration target for the future.

More than 300 sites of high-temperature hydrothermal venting have so far been identified since the discovery of black smokers. Previous estimates of the total number of active vent fields in the global oceans are based on the heat budget of young oceanic crust and by analyzing water column evidence for hydrothermal activity. This approach, however, is only considering active hydrothermal venting along the spreading axis and is not accounting for old, inactive deposits that might be accessible for mining. At the same time this method provides no information on the size of the deposits or whether sulfides are, at all, formed at the seafloor. To better constrain the abundance of sulfide deposits and their resource potential, the current study used geological information of a number of well known control areas containing active and inactive deposits and calculated an average density of one sulfide deposit

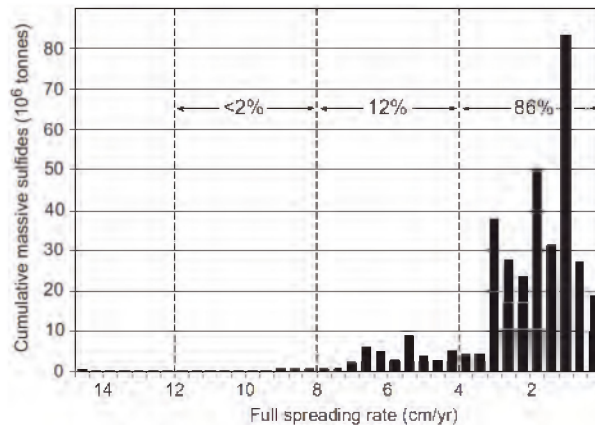


Fig. 2: Estimated size distribution of seafloor massive sulfide deposits as a function of spreading rate showing the resource potential of slow-spreading ridges.

every ~100 km for this dataset. Based on the cumulative strike length of the oceanic plate boundaries (89,000 km) the total number of deposits expected in the global neovolcanic zones is therefore ~900. Taking into account the actual range of deposit densities, the expected number of such seafloor deposits could range from 500 to 5,000.

The abundance of sulfide deposits at the seafloor is, in itself, not a measure of its resource potential. Only deposits with a certain metal content and size will be commercially attractive. Since copper and zinc are the main metals of interest in these deposits, the study focuses on these metals. Most seafloor hydrothermal deposits are not characterized well enough to quantify their true potential, but using a statistical approach the study suggests that most deposits are very small (median 70,000 tonnes) and that only

few large deposits exist. These estimates are hampered by the poor knowledge of the vertical extent of the seafloor deposits and the lack of information on inactive deposits or buried deposits that are difficult to identify with current exploration methods.

However, extrapolation of the number and size of the known seafloor systems and comparison to land-based sulfide deposits that formed by similar processes throughout Earth's history allow the first calculation of the total tonnage of seafloor massive sulfide in the global neovolcanic zones and to place this resource potential into a global framework.

Taking the calculated existence of ~ 1000 deposits with a size distribution comparable to land-based deposits and a grade of 5 % of combined copper and zinc, the total sulfide tonnage within the neovolcanic zone is estimated to be on the order of 600 million tonnes, containing ~30 million tonnes of copper and zinc. Most of this metal is suggested to occur at slow-spreading centers, which account for ~60% of the total ridge length and have been shown to host the largest deposits. From a global resource perspective the total combined copper and zinc content in the neovolcanic zones of all oceans is comparable to the annual production of copper and zinc from land-based deposits, insufficient to contribute significantly to an ever growing global demand for these metals.

It is important to understand that the predicted amount of metal within seafloor mas-

sive sulfide deposits calculated in this study is far short of the amount of metal that is actually delivered to the seafloor by black smoker vents (~106 tonnes per year). At this rate the calculated metal content in massive sulfides could be produced in only 600 years while the neovolcanic zone comprises rocks that are several thousand or several ten thousand years old. The fate of the missing metal is unclear, but can only be addressed by a better understanding of the true regional distribution and vertical extent of such deposits. Development of technologies to investigate the third dimension and to search for buried deposits, either under volcanic rocks or sediments, is a key component to understand the fate of the missing metal. Additionally, the metal content of the seafloor deposits is poorly defined due to the lack of information from the interior of the deposits and more research is needed about the processes affecting metal distribution within the deposits. On the other hand, sulfide exploitation from the seafloor will have a large impact on the marine environment with concerns about complete destruction of entire ecosystems on a local, regional and global scale. Investigations of the environmental impact of mining activities in the deep-sea are necessary and need to address reaction of faunal communities to and recovery from such activities.

References

Hannington, M.D., Jamieson, J., Monecke, T., Petersen, S., Beaulieu, S., 2011: The abundance of seafloor massive sulfide deposits. *Geology*, **39**, 1155-1158.

Mass wasting and earthquakes – unexpected interrelations offshore Central Chile

David Völker, Jacob Geersen, Jan H. Behrmann, Wilhelm Reimer Weinrebe - Dynamics of the Ocean Floor - Marine Geodynamics

Submarine landslides are an important but underestimated geological hazard that can generate destructive tsunamis and devastate populated shorelines. Based on a unique bathymetric dataset that covers ~ 90% of the Chilean continental margin between 33°S and 42°S, more than 60 submarine landslides were identified. The obtained database encompasses a wide spectrum of events, different in terms of failure mechanism, shape and size. The largest failure occurred in Pleistocene and mobilized 472 km³ of slope material, enough to cover Schleswig-Holstein with ~30 meters of debris. Rock material was dumped in the Chile Trench, where it forms a body of 1-2 km thickness. A fraction of this material has been subducted and now is sandwiched between the down-going Nazca, and the overriding South American Plates. The inhomogeneous nature of the subducted slide material changes the frictional properties of the plate interface, apparently generating a mechanical barrier for the propagation of earthquake rupture. This is the first indication of how mass wasting processes affect the seismological behavior of a convergent margin. The reverse causal relation, the triggering of mass wasting by earthquakes is often suspected. The Maule Earthquake of 2010 gave us the opportunity to investigate the impact of a megathrust earthquake on continental slope stability. We re-mapped the rupture area to investigate changes in the slope morphology quantitatively. Contrary to our expectations, this large seismic trigger did not result in major submarine slope failure.

Detailed acoustic scans of the seafloor have been acquired during 16 successive cruises led by scientist from the IFM-Geomar. This effort resulted in one of the best high-resolution bathymetric datasets of a continental margin worldwide. We used the dataset to create seafloor maps, determine gradients and spatial extent of submarine landslides and calculate displaced rock volumes. One of the highlights of the dataset is the availability of bathymetric data acquired prior to and shortly after the Maule earthquake of the 27 February 2010, the sixth largest

ever recorded earthquake (Magnitude 8.8), allowing to investigate seafloor deformation related to the event.

In total, 62 submarine landslides were mapped with extents between 1 and 1,285 km². Roughly, 5.7% of the continental slope is affected, but within certain slope sectors this value increases significantly; in particular the zone off Arauco Peninsula (between 37°S and 38°S) stands out with 31% of failed slope (Figure 1). Based on type of morphology and area of occurrence, we distinguish four basic

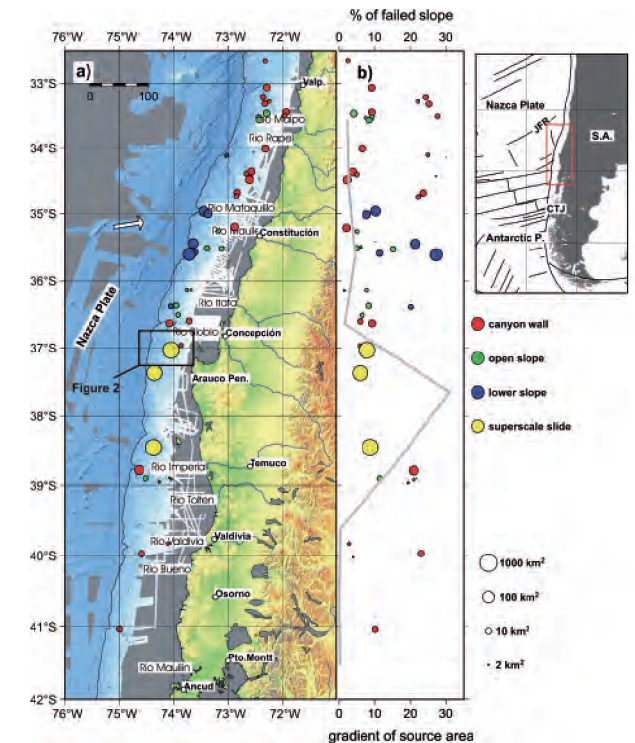


Figure 1: Bathymetric map of the working area, from a compilation of bathymetric cruises. The centers of submarine landslides are indicated as points (red = canyon wall collapses, blue = failures of lowermost slope, green = open slope failures, yellow = superscale failures) The outline of Fig. 2 is indicated as a box. (b) Spatial distribution of submarine landslides along the continental slope of Central Chile and distribution with slope gradient. Size of symbols is log-scaled to the total affected area. The percentage of areas affected by slides in latitudinal segments of 1° is given as curve

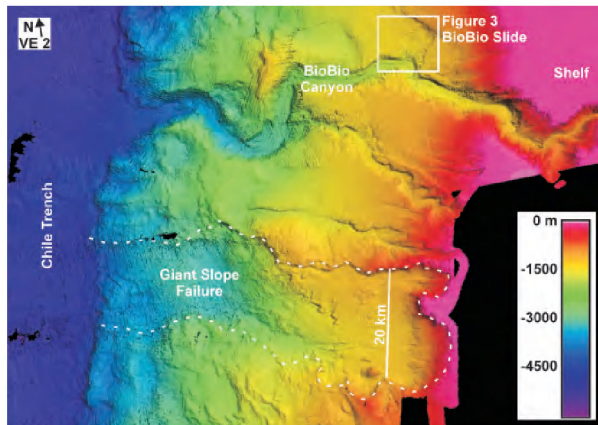


Figure 2: Giant submarine slide offshore Arauco Peninsula, stretching from the Chile Trench at 4800 m water depth to the shelf edge at 400 m water depth. Side-walls are up to 500 m high. The BioBio Canyon, like all major submarine canyon systems is bordered by translational slides like the BioBio Slide, shown in Figure 3.

groups of sediment failure: (1) failure related to submarine canyons, (2) failure on open slopes, (3) failure affecting the lowermost continental margin and (4) failure at the scale of the entire slope (Völker et al., 2012). The spatial occurrence of lower slope collapses and failures that affect the entire slope are related to the tectonic segmentation of the forearc.

Half of the slope failures are related to seven major submarine canyons that incise the continental slope. Parasound data collected during R/V Sonne Cruise 210 in 2011 demonstrated that the canyon incision destabilizes large adjoining areas (Völker et al., 2012).

Among the lowermost slope collapse features, the Reloca Slide is the most noticeable because of its size and spectacular bathy-

metric expression. The displaced rocks are preserved as prominent blocks in the Chile Trench. The lower continental slope facing Reloca Slide is steep ($20\text{--}30^\circ$), and forms a straight ramp of 2,000 m elevation. The blocks are angular, and together make up roughly 90% of the material that is missing at the slope scar. This completeness of the cohesive blocks as well as the drop height and the short runout distance are indicative of a fast event which makes Reloca Slide a tsunamogenic slide in spite of the large water depth (Völker et al., 2011).

Offshore Arauco Peninsula (Fig. 1), three very large slope indentations ranging in areal extent between $924 - 1285 \text{ km}^2$ shape the continental slope down to the abyssal plain and change the seismic reflection pattern of the sedimentary trench fill (Geersen et al. 2011a). Seismic images of the trench fill show chaotic deposits, commonly attributed to rapid deposition by mass wasting in front of the slope embayments. This is in marked contrast to the well-stratified trench fill elsewhere. Two of the failures define a significant landward retreat of the shelf break (Figure 2). The volume of material missing at the slope is in the order of $300\text{--}500 \text{ km}^3$ for each of the three slides. Submarine mass wasting in this area is linked to the local tectonic regime, where continuous uplift of the forearc results in steep slope gradients. The recurrence time of the three giant slides is about 200,000 years.

Apart from their geohazard, the large submarine slides are interesting as they appear

to affect the seismotectonic regime of Southern Chile. Deep underthrusting of the inhomogeneous slide deposits along with the downgoing Nazca Plate may play an instrumental role in arresting earthquake ruptures. One of the subducted giant slides is located at the boundary of the coseismic ruptures of the 1960 Great Chile and the 2010 Maule earthquakes (Geersen et al., 2011b). The slip zone of megathrust earthquakes must be thin and continuous to allow the fast propagation of coseismic slip over distances of hundreds of kilometers. This condition is likely given within the rupture areas of the 2010 Maule and the 1960 Great Chile earthquakes, because there the underthrust trench sediment is well stratified. In contrast, the underthrust slide material is highly inhomogeneous in terms of structure and physical properties. This results in the absence of continuous weak layers parallel to the plate boundary megathrust, and prevents development of a continuous slip zone that is required for earthquake rupture propagation.

No newly formed slides were found in the rupture area of the 2010 Maule Earthquake, the 6th largest ever instrumentally recorded earthquake, although a number of older failures were identified (Völker et al., 2011, Figure 3). The absence of new mass wasting is particularly remarkable, as the slope gradient is steeper than 20° . Among the few cases, where mass wasting was studied after an earthquake, we find tsunamogenic landslides (like the Papua New-Guinea event of 1998), as well as the absence of landslides, just like in Chile. Obviously the impact of a

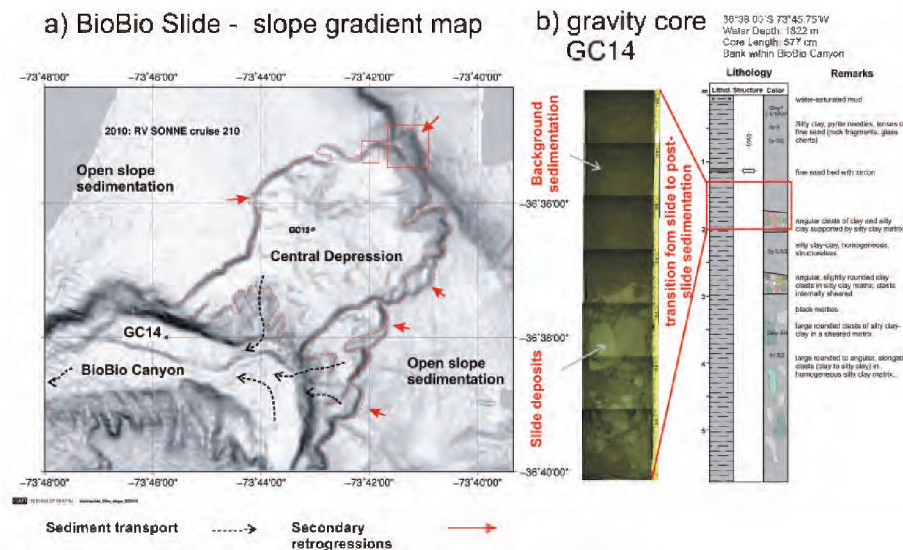


Figure 3: a) Detail gradient map of BioBio Slide and adjacent BioBio Canyon with coring locations of SONNE cruise SO210. BioBio Slide is a depression of 29 km² extent that is 55–160 m deep in relation to the surrounding sea floor, opening to the deeply incised BioBio Canyon. The steep head- and sidewalls indented by smaller and less deep, partly overlapping retrogressions. Within the canyon, a flat-topped terrace forms a depositional feature on top of which gravity core GC14 was taken. b) Core photo mosaic and description for GC14, showing the transition from the youngest, ~7000 year old mass wasting deposit from the BioBio Slide area to background sedimentation.

seismic source on the slope stability is limited by factors such as sediment supply, distribution and rheology. In contrast to popular hypotheses, we contend that the frequent recurrence of earthquakes at convergent continental margins does not necessarily pose a particular risk of landslide-generated tsunamis. As landslides of much larger volume and tsunamogenic potential are observed at seismically more stable passive margins, it seems that the frequent shaking at active margins shifts the size spectrum of subma-

rine slide events towards smaller scales.

References

- Geersen, J., Völker, D., Behrmann, J.H., Reichert, C. and Krastel, S. 2011(a); Pleistocene giant slope failures offshore Arauco Peninsula, Southern Chile. *Journal of the Geological Society London*, **168**, 1237-1248, DOI: 10.1144/0016-76492011-027.
- Geersen, J., Behrmann, J. H., Völker, D., Weinrebe, W., Krastel, S. and Reichert, C., 2011(b): Upper plate control on segmentation of the 1960 Great Chile and the 2010 Maule earthquakes [Talk]. In: *AGU Fall Meeting 2011*, 05.-09.12.2011, San Francisco, USA.
- Völker, D., Geersen, J., Weinrebe, W. and Behrmann, J. 2012: Submarine mass wasting off Southern Central Chile: Distribution and possible mechanisms of slope failure at an active continental margin. In: *Submarine Mass Movements and their Consequences*, (Eds. Y. Yamada et al.), *Advances in Natural and Technological Hazards Series*, **5**, 379-390. Springer, Dordrecht.
- Völker, D., Scholz, F. and Geersen, J. 2011: Analysis of submarine landsliding in the rupture area of the 27 February 2010 Maule earthquake, Central Chile. *Marine Geology*, **288**, 79-89, doi: 10.1016/j.margeo.2011.08.003.

Scientific Advisory Board of IFM-GEOMAR



Prof. Dr. J. Marotzke
Max-Planck-Institute for
Meteorology, Hamburg (Vor-
sitzender / Chair)

Expertise: Phys. Oceanography



Prof. Dr. D.L.T. Anderson
European Centre for Medium-
Range Weather Forecasts, Read-
ing, UK

Expertise: Climate Modelling



Prof. Dr. E.A. Boyle
Department of Geology and
Geophysics, Mass. Institute of
Technology, Cambridge, USA

Expertise: Geology



Prof. Dr. A.E. Hill
National Oceanography Centre,
Southampton, UK

Expertise: Phys. Oceanography



Prof. Dr. S. Humphris
Woods Hole Oceanographic
Institution, Woods Hole, USA

Expertise: Marine Geology,
Hydrothermal Vents



Prof. Dr. J.J. Middelburg
Utrecht University, Utrecht, The
Netherlands

Expertise: (Bio)-Geochemistry



Prof. Dr. T.A. Minshall
National Oceanography Cen-
tre, University of Southampton,
Southampton, UK

Expertise: Marine Geophysics



Prof. Dr. A.C. Mix
College of Oceanic & Atmos-
pheric Sciences, Oregon State
University, Corvallis, USA

Expertise: Paleoceanography



Prof. Dr. J.L. Olsen
Universit t Groningen, Gronin-
gen, The Netherlands

Expertise: Ecological and evolu-
tionary Genomics



Prof. Dr. Y. Olsen
Norwegian University of Sci-
ences and Technology, Institute
of Biology, Trondheim, Norway

Expertise: Ecology of Plankton
and Aquaculture



Prof. Dr. J.A. Pearce
Department of Earth Science,
Marine Geology and Geochemis-
try, Cardiff University, UK

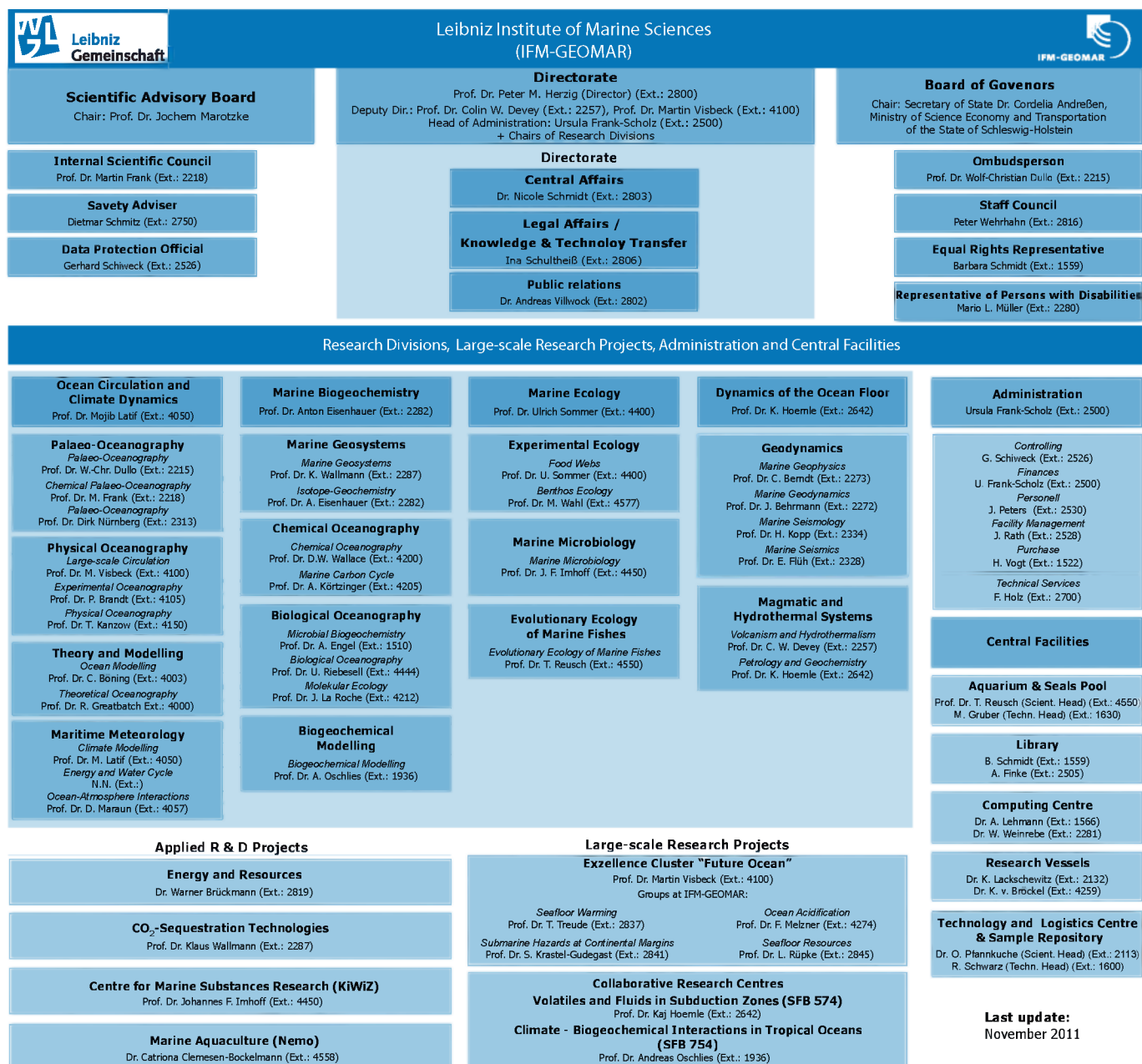
Expertise: Mineralogy and
Petrology, Geochemistry



Prof. Dr. D. Turner
University of Gothenburg, Goth-
enburg, Sweden

Expertise: Marine Chemistry

Organization & Appendices



Last update:
November 2011

From IFM-GEOMAR to GEOMAR

- The transition -

2011



IFM-GEOMAR

Leibniz-Institut für Meereswissenschaften
an der Universität Kiel

**Leibniz Institute of Marine Sciences
(IFM-GEOMAR)**

Foundation under Public Law

Financing:

Federal Ministry for Education and Research (BMBF) (50%)
Ministry for Research, Economics and Transport of the State of Schleswig-Holstein (MWWV) (50%)

Affiliation:

Leibniz Association (WGL)
www.leibniz-gemeinschaft.de

Note to our readers:

At the time this report is published, the Leibniz Institute of Marine Sciences (IFM-GEOMAR) has been transformed into the Helmholtz Centre for Ocean Research (GEOMAR).

Some important changes due to this transition can be found below.

For further details visit our new website under www.geomar.de



2012



GEOMAR

Helmholtz Centre for Ocean Research Kiel

**Helmholtz Centre for Ocean
Research Kiel (GEOMAR)**

Foundation under Public Law

Financing:

Federal Ministry for Education and Research (90%)
Ministry for Education and Science of the State of Schleswig-Holstein (10%)

Affiliation:

Helmholtz Association (HGF)
www.helmholtz.de

Appendices (on CD)

Photo credits:

AUV ABYSS Team: p. 11 (r/t), Back cover; BEA: p. 11 (m); F. Behling: p. 10 (l); T. Bierstedt: p. 21, p. 28; W. Brückmann: p. 16 (m/t); C. Clemmesen: p. 30; Dalhousie University: p. 16 (l); U. Deinet: p. 15 (m); F. Dott: p. 1; C. Eizaguirre: p. 16 (m/b); B. Grundmann: p. 8; K. Hissmann: p. 10 (r); JAGO Team (Title); H. Kassens: p. 20 (b); S. Kiesche (Inner Title); S. Krastel (Table of Contents); U. Kunz: p. 13 (r/b), p. 14 (l/t); M. Müller: p. 22; H. Muss: p. 5 (m); OFOS: p. 27; OUC: p. 15 (r); S. Paasch & M. Gulya: p. 3; D. Pence: p. 4, p. 11 (r/b); B. Quack: p. 29; ROV Kiel6000: p. 12, p. 34; R. Schwarz: Inside Back cover; N. Smith: p. 14 (m/b); J. Steffen: p. 13 (m), p. 13, l/t, p. 14 (l/b), p. 14 (m/t), p. 14 (r), p. 16 (r), p. 17 (3), p. 18 (3), p. 19 (m); I. Suck: p. 11 (m/t); A. Villwock: p. 5 (l), p. 13 (m/l), p. 18 (m), p. 19 (4), p. 20 (t); M. Wahl: p. 9 (t), p. 33 (2); H. Wehrmann: p. 9 (b). | b=bottom, l=left, m=middle, r= right, t=top

Appendices

1. Management and Organization	1
1.1 IFM-GEOMAR Overview	1
1.2 Organizational Structure	2
2. Human Resources	5
3. Budgets and Projects	9
3.1 Budget Tables	9
3.2 Projects	14
4. Ship statistics and Expeditions 2010	43
5. Publications	46
5.1 Books (Authorship)	46
5.2 Books (Editorship)	46
5.3 Book Contributions	46
5.4 Peer-reviewed Publications	47
5.5 Other (non-reviewed) Publications	66
5.6 Electronic Publications	67
5.6 University Publications	68
6. Scientific and Public Presentations	73
6.1 Invited Scientific Presentations	73
6.2 Other Scientific Presentations	78
6.3 Poster	95
6.4 Public Lectures	107
6.5 Radio & TV Interviews	108
7. Scientific Exchange and Cooperation	110
7.1 Visitors at IFM-GEOMAR	110
7.2 Visits by IFM-GEOMAR staff	111
7.3 Conferences & Meetings (organized by IFM-GEOMAR staff)	112
7.4 Colloquia & Seminars at IFM-GEOMAR	113
7.5 Expert Activities	120
7.6 Editorial Boards	123
7.7 Honors and Awards	124
7.8 Technology Transfer / Patents	124
8. Teaching Courses 2010	125
8.1 External Teaching Courses	125
8.2 Teaching at Christian-Albrechts Universität zu Kiel	126
9. Acronyms	134

GEFÖRDERT VOM



Bundesministerium
für Bildung
und Forschung

Ministerium für Wissenschaft,
Wirtschaft und Verkehr
des Landes Schleswig-Holstein



The Leibniz Institute of Marine Sciences (IFM-GEOMAR) is a member of the Leibniz Association (Leibniz Gemeinschaft - WGL), the Marine Board of the European Science Foundation, the Partnership for Observation of the Global Oceans (POGO) and the German Marine Research Consortium (Konsortium Deutsche Meeresforschung - KDM)



IFM-GEOMAR Annual Report 2011

Appendices

From the Seafloor to the Atmosphere

- Marine Sciences at IFM-GEOMAR Kiel -

IFM-GEOMAR Annual Report 2011 - Appendices

Editor: Andreas Villwock

Leibniz-Institut für Meereswissenschaften / Leibniz Institute of Marine Sciences
IFM-GEOMAR
Dienstgebäude Westufer / West Shore Campus
Düsternbrooker Weg 20
D-24105 Kiel
Germany

Leibniz-Institut für Meereswissenschaften / Leibniz Institute of Marine Sciences
IFM-GEOMAR
Dienstgebäude Ostufer / East Shore Campus
Wischhofstr. 1-3
D-24148 Kiel
Germany

Tel.: ++49 431 600-2800
Fax: ++49 431 600-2805
E-mail: info@ifm-geomar.de, from 2012: info@geomar.de
Web: www.ifm-geomar.de, from 2012: www.geomar.de

Cover: JAGO submersible in the Mediterranean Sea (JAGO Team, IFM-GEOMAR).
Table of Contents: Recovering of ROV Kiel 6000 (R. Schwarz, IFM-GEOMAR).

Appendices

1. Management and Organization	1
1.1 IFM-GEOMAR Overview	1
1.2 Organizational Structure	2
2. Human Resources	5
3. Budgets and Projects	9
3.1 Budget Tables	9
3.2 Projects	14
4. Ship Statistics and Expeditions 2011	43
5. Publications	46
5.1 Books (Authorship)	46
5.2 Books (Editorship)	46
5.3 Book Contributions	46
5.4 Peer-reviewed Publications	47
5.5 Other Publications	66
5.6 Electronic Publications	67
5.6 University Publications	68
6. Scientific and Public Presentations	73
6.1 Invited Scientific Presentations	73
6.2 Other Scientific Presentations	78
6.3 Poster	95
6.4 Public Lectures	107
6.5 Radio & TV Interviews	108
7. Scientific Exchange and Cooperation	110
7.1 Visitors at IFM-GEOMAR	110
7.2 Visits by IFM-GEOMAR staff	111
7.3 Conferences & Meetings (organized by IFM-GEOMAR staff)	112
7.4 Colloquia & Seminars at IFM-GEOMAR	113
7.5 Expert Activities	120
7.6 Editorial Boards	123
7.7 Honors and Awards	124
7.8 Technology Transfer / Patents	124
8. Teaching Courses 2011	125
8.1 External Teaching Courses	125
8.2 Teaching at Christian-Albrechts Universität zu Kiel	126
9. Acronyms	134

1. Management & Organization

1.1 IFM-GEOMAR Overview

The Leibniz Institute of Marine Sciences at the Kiel University (IFM-GEOMAR) was founded January 1, 2004 through a merger of the former Institute for Marine Research (IfM) and the GEOMAR Research Centre for Marine Geosciences.

The mission of IFM-GEOMAR is **to investigate the physical, chemical, biological, and geological processes in the ocean and their interaction with the seafloor and the atmosphere.**

IFM-GEOMAR has identified four overarching research themes:

- Role of the Ocean in Climate Change
- Human Impact on Marine Ecosystems
- Living and Non-Living Marine Resources
- Plate Tectonic Processes and Geological Hazards.

The research topics are grouped in four areas: Ocean Circulation and Climate Dynamics, Marine Biogeochemistry, Marine Ecology, and Dynamics of the Ocean Floor. In addition, there are two major interdisciplinary Collaborative Research Centres (SFBs) funded by the German Science Foundation (DFG).

The institute is an independent foundation under public law, supervised by a "Board of Governors" which consists of representatives of State and Federal Governments, the Kiel University, a representative from another research institution, a representative from pri-

vate industry and the chairman of the institute's Scientific Advisory Board (SAB). The SAB of IFM-GEOMAR is an internationally constituted advisory group with leading scientists representing all major research disciplines found at the institute. An overview of the organizational structure of the institute is shown in Figure 1 (page 4). By the end of 2011, IFM-GEOMAR had about 764 employees, including 383 scientists and 381 service and technical staff (incl. student assistance). About 306 scientists and 242 service and technical staff were funded through research grants.

The Leibniz Institute of Marine Sciences is associated with the Kiel University through a cooperation agreement and contributes substantially to undergraduate and graduate teaching in the following fields: Bachelor in "Physics of the Earth System: Oceanography - Meteorology - Geophysics", Master in "Climate Physics: Meteorology and Physical Oceanography", Master in "Biological Oceanography", and contributions to other courses in Geosciences at Kiel University.

The involvement of master, diploma and Ph.D. students in research projects is an important element of IFM-GEOMAR research. The total number of students at IFM-GEOMAR is currently about 300. Through training of students and young scientists from foreign countries, the institute has contributed significantly to the development of

infrastructures for marine science in many regions of the world. Several international study programmes have been implemented in recent years.

Much of the institute's research work contributes to international research efforts such as the World Climate Research Programme (WCRP), the International Geosphere-Biosphere Programme (IGBP) or the Integrated Ocean Drilling Programme (IODP). Emphasis is on a better understanding of the ocean's past and present role for climate variations and air-sea interactions, the role of biogeochemical transport and transformations in global change, the response and sensitivity of marine ecosystems to external forcing, gas hydrate research and risk assessment of natural hazards due to plate tectonics.

IFM-GEOMAR scientists have a long tradition of participating in national and international planning and management of large-scale inter-disciplinary research programs. This includes programmes such as CLIVAR (Climate Variability and Predictability), BALTEX (Baltic Sea Experiment), SOLAS (Surface Ocean Lower Atmosphere), GLOBEC (Global Ocean Ecosystems Dynamics), IODP, Inter-ridge, and others.

The scientific work of IFM-GEOMAR could not have been maintained without funding of peer-reviewed proposals through the Ger-

man Science Foundation (DFG), the Federal Ministry of Education and Research (BMBF), the directorates of the European Union (EU) as well as other funding agencies. We would like to express our gratitude to all of those who have supported our research during the past years.

Highlights in this context are the two Collaborative Research Centres (Sonderforschungsbereiche) in which IFM-GEOMAR plays a leading role. Since 2008, DFG is funding SFB 754 on "Biogeochemistry Interactions in the Tropical Ocean". SFB 574 on "Fluids and Volatiles in Subduction Zones" that started in 2000, was implemented within the groups of the former GEOMAR and investigates the "subduction factory" and its role for climate feedbacks and natural disasters.

In 2006, IFM-GEOMAR together with six faculties of Kiel University, the Institute for the World Economy and the Muthesius School of Arts received 36 Mio. Euros funding for the Excellence Cluster "Future Ocean". Within IFM-GEOMAR four new junior research groups of the cluster were established that contribute substantially to a number of projects of the cluster.

The results of the institute's research work are generally made available through a wide range of publications. The main emphasis is on peer-reviewed international journals. Increasingly, dissemination of information in electronic form through the internet portal of IFM-GEOMAR (www.ifm-geomar.de) is used.

In particular in the field of technology development, IFM-GEOMAR cooperates with a number of small and medium-sized enterprises that are active in marine technology and science and are partly founded by former staff members of the institute.

The Leibniz Institute of Marine Sciences is a member of the Leibniz Association (Wissenschaftsgemeinschaft Gottfried Wilhelm Leibniz (WGL)), the Konsortium Deutsche Meeresforschung (KDM), the European Marine Board of the European Science Foundation and the Partnership for Observation of the Global Oceans (POGO).

1.2 Organizational Structure (31.12.2011)

See also diagram on page 4

1. Directorate

The Directorate of IFM-GEOMAR consists of the Director (chair) and the leaders of the Research Divisions. Current members of the Directorate are:

- **Prof. Dr. P.M. Herzig (Director)**
- Prof. Dr. M. Latif (RD1)
- Prof. Dr. A. Eisenhauer (RD2)
- Prof. Dr. U. Sommer (RD3)
- Prof. Dr. K. Hoernle (RD4)

Guests:

- Prof. Dr. M. Visbeck, Deputy Director & Chair Excellence Cluster "The Future Ocean"
- Prof. Dr. C. Devey, Deputy Director
- Prof. Dr. K. Hoernle, Chair SFB 574
- Prof. Dr. D. Wallace, Chair SFB 754
- Prof. Dr. M. Frank, Chair, Scientific Council
- Mrs. U. Frank-Scholz, Head of Administration
- Dr. N. Schmidt, Central Affairs
- Dr. A. Villwock, Public Relations

2. Board of Governors

- **Dr. C. Andreßen, Secretary of State, Ministry of Science, Economic Affairs and Transport of the State of Schleswig-Holstein, Kiel (Chair)**
- RD. K. Wollin, Federal Ministry for Education and Research, Bonn
- Prof. Dr. G. Fouquet, President, Kiel University
- Prof. Dr. L. Kipp, Dean of the Faculty for Mathematics and Natural Sciences, Kiel University

- Prof. Dr. J. Marotzke, Chair, Scientific Advisory Board
- Prof. Dr. K. Lochte, Director, Alfred-Wegener-Institute for Polar and Marine Research, Bremerhaven
- Dr. P. Murmann, Zöllner Signal GmbH, Kiel

Guests with consulting status:

- Dr. I. Hennings, Representative of the Scientific Staff (staff council)
- Mrs. B. Domeyer, Representative of the Non-scientific Staff (staff council)
- Mrs. B. Schmidt, Representative for Equal Rights
- Dr. W.D. Glanz, Ministry of Science, Economic Affairs and Transport of the State of Schleswig-Holstein
- Mr. M. Wagner, Ministry of Science, Economic Affairs and Transport of the State of Schleswig-Holstein
- Mrs. K. Pieper, Ministry of Science, Economic Affairs and Transport of the State of Schleswig-Holstein
- Prof. Dr. P.M. Herzig, Director of IFM-GEOMAR
- Prof. Dr. M. Visbeck, Deputy Director of IFM-GEOMAR
- Prof. Dr. C. Devey, Deputy Director of IFM-GEOMAR
- Prof. Dr. M. Frank, Chair, Scientific Council

Other guests:

- Dr. J. Biel, Managing Director, Chamber of Commerce, Kiel
- Mrs. U. Frank-Scholz, Head of Administration, IFM-GEOMAR
- Dr. N. Schmidt, Central Affairs, IFM-GEOMAR
- Mrs. I. Schultheiß, Legal Affairs
- Dr. A. Villwock, Public Relations, IFM-GEOMAR

3. Scientific Advisory Board

- **Prof. Dr. J. Marotzke, Max-Planck-Institute for Meteorology, Hamburg (Chair)**
- Prof. Dr. D.L.T. Anderson, European Centre for Medium-Range Weather Forecasts, Berkshire, UK
- Prof. Dr. E.A. Boyle, Department of Geology and Geophysics, Massachusetts Institute of Technology, Cambridge, USA
- Prof. Dr. E. Hill, National Oceanography Centre, Southampton, UK
- Prof. Dr. S. Humphris, Woods Hole Oceanographic Institution, USA
- Prof. Dr. Jack Middelburg, Utrecht University, Utrecht, The Netherlands
- Prof. Dr. Tim A. Minshull, National Oceanography Centre, Southampton, UK
- Prof. Dr. A.C. Mix, College of Oceanic & Atmospheric Sciences, Oregon State University, Corvallis, USA
- Prof. Dr. Jeanine Olsen, University of Groningen, Groningen, The Netherlands
- Prof. Dr. Y. Olsen, Norwegian University of Sciences and Technology, Institute of Biology, Trondheim, Norway
- Prof. Dr. J.A. Pearce, Department of Earth Science, Marine Geology and Geochemistry, Cardiff University, UK
- Prof. Dr. D. Turner, Chalmers University of Technology, Gothenburg, Sweden

4. Scientific Council

Members (Member / Deputy Member):

Prof. Dr. M. Frank (Chair) /
Prof. Dr. M. Wahl (Deputy Chair)

a. Professors:

- M. Frank / W.-C. Dullo
- M. Latif / N.N.
- M. Visbeck / P. Brandt
- C. Böning / R. Greatbatch
- A. Eisenhauer / K. Wallmann
- A. Körtzinger / D. Wallace
- U. Riebesell / A. Engel
- A. Oschlies / D. Wallace
- J. Imhoff / T. Reusch
- M. Wahl / U. Sommer
- K. Hoernle / C. Devey
- J. Behrmann / C. Berndt

b. Assistant Professors and Scientists with "Habilitation":

- FB1: K. Krüger / T. Kanzow
- FB2: J. LaRoche / H. Bange
- FB3: U. Piatkowski / N.N.
- FB4: E. Flüh / A. Freundt

c. Scientific staff:

- FB1: J. Karstensen / T. Martin
- FB2: K. v. Bröckel / P. Linke
- FB3: B. Matthiessen / J. Süling
- FB4: P. van den Bogaard / W. Weinrebe

Appendices

 Leibniz Gemeinschaft		Leibniz Institute of Marine Sciences (IFM-GEOMAR)		 IFM-GEOMAR
Scientific Advisory Board Chair: Prof. Dr. Jochem Marotzke		Directorate Prof. Dr. Peter M. Herzig (Director) (Ext.: 2800) Deputy Dir.: Prof. Dr. Colin W. Devey (Ext.: 2257), Prof. Dr. Martin Visbeck (Ext.: 4100) Head of Administration: Ursula Frank-Scholz (Ext.: 2500) + Chairs of Research Divisions		Board of Governors Chair: Secretary of State Dr. Cordelia Andreen, Ministry of Science Economy and Transportation of the State of Schleswig-Holstein
Internal Scientific Council Prof. Dr. Martin Frank (Ext.: 2218)	Directorate Central Affairs Dr. Nicole Schmidt (Ext.: 2803)		Ombudsperson Prof. Dr. Wolf-Christian Dullo (Ext.: 2215)	
Safety Adviser Dietmar Schmitz (Ext.: 2750)	Legal Affairs / Knowledge & Technology Transfer Ina Schultheiß (Ext.: 2806)		Staff Council Peter Wehrhahn (Ext.: 2816)	
Data Protection Official Gerhard Schiweck (Ext.: 2526)	Public relations Dr. Andreas Villvock (Ext.: 2802)		Equal Rights Representative Barbara Schmidt (Ext.: 1559)	
			Representative of Persons with Disabilities Mario L. Müller (Ext.: 2280)	
Research Divisions, Large-scale Research Projects, Administration and Central Facilities				
Ocean Circulation and Climate Dynamics Prof. Dr. Mojib Latif (Ext.: 4050)	Marine Biogeochemistry Prof. Dr. Anton Eisenhauer (Ext.: 2282)	Marine Ecology Prof. Dr. Ulrich Sommer (Ext.: 4400)	Dynamics of the Ocean Floor Prof. Dr. K. Hoernle (Ext.: 2642)	Administration Ursula Frank-Scholz (Ext.: 2500)
Palaeo-Oceanography <i>Palaeo-Oceanography</i> Prof. Dr. W.-Chr. Dullo (Ext.: 2215) <i>Chemical Palaeo-Oceanography</i> Prof. Dr. M. Frank (Ext.: 2218) <i>Palaeo-Oceanography</i> Prof. Dr. Dirk Nürnberg (Ext.: 2313)	Marine Geosystems <i>Marine Geosystems</i> Prof. Dr. K. Wallmann (Ext.: 2287) <i>Isotope-Geochemistry</i> Prof. Dr. A. Eisenhauer (Ext.: 2282)	Experimental Ecology <i>Food Webs</i> Prof. Dr. U. Sommer (Ext.: 4400) <i>Benthos Ecology</i> Prof. Dr. M. Wahl (Ext.: 4577)	Geodynamics <i>Marine Geophysics</i> Prof. Dr. C. Berndt (Ext.: 2273) <i>Marine Geodynamics</i> Prof. Dr. J. Behrmann (Ext.: 2272) <i>Marine Seismology</i> Prof. Dr. H. Kopp (Ext.: 2334) <i>Marine Seismics</i> Prof. Dr. E. Flüh (Ext.: 2328)	<i>Controlling</i> G. Schiweck (Ext.: 2526) <i>Finances</i> U. Frank-Scholz (Ext.: 2500) <i>Personell</i> J. Peters (Ext.: 2530) <i>Facility Management</i> J. Rath (Ext.: 2528) <i>Purchase</i> H. Vogt (Ext.: 1522) <i>Technical Services</i> F. Holz (Ext.: 2700)
Physical Oceanography <i>Large-scale Circulation</i> Prof. Dr. M. Visbeck (Ext.: 4100) <i>Experimental Oceanography</i> Prof. Dr. P. Brandt (Ext.: 4105) <i>Physical Oceanography</i> Prof. Dr. T. Kanwov (Ext.: 4150)	Chemical Oceanography <i>Chemical Oceanography</i> Prof. Dr. D.W. Wallace (Ext.: 4200) <i>Marine Carbon Cycle</i> Prof. Dr. A. Kortzinger (Ext.: 4205)	Marine Microbiology <i>Marine Microbiology</i> Prof. Dr. J. F. Imhoff (Ext.: 4450)	Magmatic and Hydrothermal Systems <i>Volcanism and Hydrothermalism</i> Prof. Dr. C. W. Devey (Ext.: 2257) <i>Petrology and Geochemistry</i> Prof. Dr. K. Hoernle (Ext.: 2642)	
Theory and Modelling <i>Ocean Modelling</i> Prof. Dr. C. Böning (Ext.: 4003) <i>Theoretical Oceanography</i> Prof. Dr. R. Greatbatch Ext.: 4000)	Biological Oceanography <i>Microbial Biogeochemistry</i> Prof. Dr. A. Engel (Ext.: 1510) <i>Biological Oceanography</i> Prof. Dr. U. Riebesell (Ext.: 4444) <i>Molecular Ecology</i> Prof. Dr. J. La Roche (Ext.: 4212)	Evolutionary Ecology of Marine Fishes <i>Evolutionary Ecology of Marine Fishes</i> Prof. Dr. T. Reusch (Ext.: 4550)		Central Facilities
Maritime Meteorology <i>Climate Modelling</i> Prof. Dr. M. Latif (Ext.: 4050) <i>Energy and Water Cycle</i> N.N. (Ext.:) <i>Ocean-Atmosphere Interactions</i> Prof. Dr. D. Marau (Ext.: 4057)	Biogeochemical Modelling <i>Biogeochemical Modelling</i> Prof. Dr. A. Oschlies (Ext.: 1936)			Aquarium & Seals Pool Prof. Dr. T. Reusch (Scient. Head) (Ext.: 4550) M. Gruber (Techn. Head) (Ext.: 1630)
Applied R & D Projects		Large-scale Research Projects		
Energy and Resources Dr. Warner Brückmann (Ext.: 2819)		Excellence Cluster "Future Ocean" Prof. Dr. Martin Visbeck (Ext.: 4100) Groups at IFM-GEOMAR: <i>Seafloor Warming</i> Prof. Dr. T. Treude (Ext.: 2837) <i>Ocean Acidification</i> Prof. Dr. F. Meinzer (Ext.: 4274) <i>Submarine Hazards at Continental Margins</i> Prof. Dr. S. Krastel-Gudegast (Ext.: 2841) <i>Seafloor Resources</i> Prof. Dr. L. Rüpke (Ext.: 2845)		
CO₂-Sequestration Technologies Prof. Dr. Klaus Wallmann (Ext.: 2287)		Collaborative Research Centres		
Centre for Marine Substances Research (KiWiZ) Prof. Dr. Johannes F. Imhoff (Ext.: 4450)		Volatiles and Fluids in Subduction Zones (SFB 574) Prof. Dr. Kaj Hoernle (Ext.: 2642)		
Marine Aquaculture (Nemo) Dr. Catriona Clemesen-Bockelmann (Ext.: 4558)		Climate - Biogeochemical Interactions in Tropical Oceans (SFB 754) Prof. Dr. Andreas Oschlies (Ext.: 1936)		
		Research Vessels Dr. K. Lackschewitz (Ext.: 2132) Dr. K. v. Brockel (Ext.: 4259)		
		Technology and Logistics Centre & Sample Repository Dr. O. Pfannkuche (Scient. Head) (Ext.: 2113) R. Schwarz (Techn. Head) (Ext.: 1600)		
		Last update: November 2011		

2. Human Resources

Table 2.1

Employment positions acc. to sources of support and pay/remuneration grade ¹⁾ - Personnel (financed by institutional and third-party resources) in terms of full-time equivalents as of [reporting date 31.12.2011] -			
	Total number ^{2), 3)}	Number financed by	
		institutional resources ²⁾	third-party resources ²⁾
Total (incl. student assistants)	581,7	259,5	322,1
1. Academic and higher management staff	221,4	103,0	118,4
- W2 .. W3, C3 .. C4, SDV	22,0	22,0	0,0
- W1, C1 .. C2	3,0	3,0	0,0
- I / A16 / E15Ü	1,0	1,0	0,0
- Ia / A15 / E15	7,0	4,5	2,5
- Ib / A14 / E14	51,0	40,0	11,0
- IIa / III ⁴⁾ / A13 / E13..E13Ü	137,4	32,5	104,9
2. Doctoral candidates	72,2	2,0	70,2
3. Other staff	191,5	141,9	49,6
- IV..III/A10..A12/E10..E12	43,4	34,9	8,5
- V / A8 .. A9 / E8 .. E9	97,6	66,1	31,5
- VI / A7 / E7	2,0	2,0	0,0
- VIII..VII / A5..A6 / E5..E6	32,2	23,6	8,5
- Wage brackets, other staff	10,3	9,3	1,0
- Trainees	6,0	6,0	0,0
4. Student assistance	96,5	12,6	84,0

¹⁾ Employment positions acc. to Bundesangestellten-Tarifvertrag (National Agreement for Public Sector White-Collar Workers) or other collective pay agreements for staff which is financed by institutional or third-party resources (incl. trainees and guest scientists, but excluding diploma students, student assistants und contracts for work and services)

²⁾ In full time equivalents; correct to one decimal place only

³⁾ Values in column 2 („Total number“) for „Total“, „1. Academic and management staff“, „2. Doctoral candidates“ und „3. Other staff“ correspond to the respective values in Table 4.2

⁴⁾ Employment acc. to BAT III until Diplom degree was conferred

Table 2.2

Employment positions acc. to organizational units

- Personnel (financed by institutional and third-party resources) in terms of full-time equivalents as of [reporting date 31.12.2011] -

Employment positions	Total	Academic and higher management staff ¹	Doctoral candidates²	Other staff, trainees	Student assistance
Entire establishment	581,7	221,4	72,2	191,5	96,5
Research Division 1	124,8	54,3	23,3	20,5	26,8
Research Division 2	138,7	61,7	21,9	33,6	21,5
Research Division 3	88,9	42,5	12,6	18,5	15,3
Research Division 4	80,6	38,8	12,8	15,1	14,0
Interdisciplinary Project Groups	0,5	0,0	0,0	0,0	0,5
Energy Projects & Director	41,8	17,0	1,6	10,8	12,4
Central Facilities (without administration)	57,9	7,2	0,0	45,0	5,7
Administration	48,4	0,0	0,0	48,0	0,4

¹⁾ Employment positions acc. to BAT IIa / TVL13 and above (except doctoral candidates)

²⁾ Doctoral candidates if financed by institutional or third-party resources

Table 2.3 Personnel - In persons (financed by institutional and third-party resources) acc. to pay/remuneration grade as of [reporting date 31.12.2011]									
	Total number	Financed by third-party resources		Temporary contracts		Women		Women with temporary contracts	
		Number	% ¹⁾	Number	% ¹⁾	Number	% ¹⁾	Number	% ^{1), 2)}
Total	764	446	58 %	548	72 %	355	46 %	272	36 %
1. Academic and higher management staff	248	130	52 %	171	69 %	90	36 %	80	32 %
- W2 .. W3, C3 .. C4, SDV	22	0	0 %	1	5 %	1	5 %	0	0 %
- W1, C1 .. C2	3	0	0 %	3	100 %	1	33 %	1	33 %
- I / A16 / E15Ü	1	0	0 %	1	100 %	0	0 %	0	0 %
- Ia / A15 / E15	8	2	25 %	2	25 %	3	38 %	1	13 %
- Ib / A14 / E14	54	8	15 %	12	22 %	9	17 %	3	6 %
- IIa / III / A13 / E13 .. E13Ü	160	120	75 %	152	95 %	76	47 %	75	47 %
2. Doctoral candidates	135	131	97 %	135	100 %	65	48 %	65	48 %
3. Other staff	221	50	23 %	82	37 %	116	52 %	43	19 %
- IV..III / A10..A12 / E10..E12	45	9	20 %	11	24 %	10	22 %	5	11 %
- V / A8 .. A9 / E8 .. E9	115	31	27 %	42	37 %	78	68 %	27	23 %
- VI / A7 / E7	3	0	0 %	0	0 %	0	0 %	0	0 %
- VIII .. VII / A5 .. A6 / E5 .. E6	39	9	23 %	17	44 %	22	56 %	8	21 %
- Wage groups, other staff	13	1	8 %	6	46 %	4	31 %	1	8 %
- Trainees	6	0	0 %	6	100 %	2	33 %	2	33 %
4. Student Assistants	160	135	84 %	160	100 %	84	52 %	84	52 %

¹⁾ Correct to one decimal place only

²⁾ Women with temporary contracts / number of women

Appendices

Table 2.4
Academic and higher management staff, age structure (in persons)

	Total		< 30		30 -39		40 -49		50 -59		> 59	
	Total	Women	Total	Women	Total	Women	Total	Women	Total	Women	Total	Women
Entire establishment	248	90	23	10	96	48	66	22	53	9	10	1
Research Division 1	59	17	3	1	24	10	16	3	15	3	1	0
Research Division 2	72	29	9	4	29	15	19	7	12	3	3	0
Research Division 3	53	27	8	5	20	12	11	7	10	2	4	1
Research Division 4	40	5	2	0	14	5	13	0	9	0	2	0
Interdisciplinary Project Groups	0	0	0	0	0	0	0	0	0	0	0	0
Energy Projects & Director	18	9	1	0	8	5	5	4	4	0	0	0
Central Facilities (without Admin.)	6	3	0	0	1	1	2	1	3	1	0	0
Administration	0	0	0	0	0	0	0	0	0	0	0	0

Table 2.5
Academic and higher management staff, duration of employment (years) (in persons)

	Total		< 5		5 - 9		10 -14		15 -20		> 20	
	Total	Women	Total	Women	Total	Women	Total	Women	Total	Women	Total	Women
Entire establishment	248	90	123	57	117	31	4	2	2	0	2	0
Research Division 1	59	17	28	11	27	6	1	0	1	0	2	0
Research Division 2	72	29	42	20	27	7	2	2	1	0	0	0
Research Division 3	53	27	27	17	26	10	0	0	0	0	0	0
Research Division 4	40	5	14	2	25	3	1	0	0	0	0	0
Interdisciplinary Project Groups	0	0	0	0	0	0	0	0	0	0	0	0
Energy Projects & Director	18	9	10	6	8	3	0	0	0	0	0	0
Central Facilities (without Admin.)	6	3	2	1	4	2	0	0	0	0	0	0
Administration	0	0	0	0	0	0	0	0	0	0	0	0

3. Budgets & Projects

3.1 Budget Tables

Table 3.1: Revenues and expenditures (in € 1,000)						
	2011	2010	2009	2008	2007	2006
Revenues						
Total	59.413,9	60.851,4	59.306,7	57.289,8	49.610,2	46.874,0
1. Institutional support *	31.303,2	32.907,9	32.654,5	28.527,9	28.198,6	30.746,0
- German "Länder"	15.943,2	15.744,5	16.920,3	15.138,0	15.632,4	14.731,8
- Federal Government	15.360,0	17.163,4	15.734,2	12.849,9	12.566,2	12.314,2
- Other institutional support	0,0	0,0	0,0	540,0	0,0	3.700,0
<i>Proportion of institutional support in overall financial resources (in %)</i>	<i>52,7%</i>	<i>54,1%</i>	<i>55,1%</i>	<i>49,8%</i>	<i>56,8%</i>	<i>65,6%</i>
2. Third-party resources	28.110,7	27.943,5	26.652,2	28.761,9	21.411,6	16.128,0
2.1 Research support	21.724,4	19.341,5	19.034,5	17.410,0	16.821,7	13.824,0
- DFG (German Research Foundation)	4.412,8	5.250,3	7.098,7	4.712,5	6.409,0	2.952,0
- DFG-SFB 574 and 754	4.691,3	1.536,2	3.785,2	2.948,9	1.439,0	3.244,5
- Federal Government	7.714,2	10.335,0	6.380,8	5.877,8	5.539,4	4.599,5
- German "Länder"	376,9	324,8	311,3	418,5	1.499,1	1.307,3
- EU project funding	4.157,7	1.713,9	1.362,4	3.266,4	1.692,8	1.620,5
- Foundations. other research support	371,5	181,3	96,1	185,9	242,4	100,2
- Joint projects with Kiel University	0,0	0,0	0,0	0,0	0,0	0,0
2.2 Services, contracts, licences, publications	4.439,0	7.186,7	5.721,8	9.441,6	3.098,0	1.098,4
- Contracts with private enterprises or public authorities, cooperation with industry	4.436,9	7.184,9	5.719,9	9.440,3	3.098,0	1.098,4
- Patent exploitation, licences	0,0	0,0	0,0	0,0	0,0	0,0
- Publications	0,0	0,0	0,0	0,0	0,0	0,0
- Other services	2,1	1,8	1,9	1,3	0,0	0,0

*) 2009 incl. Konjunkturprogramm
continued on next page.

Table 3.1: Revenues and expenditures (continued)

(in € 1,000)

	2011	2010	2009	2008	2007	2006
2.3 Other third-party resources	1.947,3	1.415,3	1.895,9	1.910,3	1.491,9	1.205,6
- Aquarium	143,3	138,4	147,7	126,1	90,0	71,7
- Charter for submersibles	0,0	0,0	0,0	0,0	0,0	0,0
- Misc, income (interest. etc.)	29,0	27,6	30,8	71,8	47,8	44,1
- Rentals	2,3	0,0	0,0	0,0	0,7	1,1
- Charter for research vessels	1.766,3	1.249,3	1.714,8	1.691,0	1.350,5	1.036,1
- Charter for submersibles	0,0	0,0	0,0	0,0	0,0	51,4
- Sale of vehicles	0,0	0,0	2,6	0,0	0,0	0,0
- Other sales	6,4	0,0	0,0	21,4	2,9	1,2
<i>Proportion of third-party funding in overall financial resources (in %)</i>	<i>47,3%</i>	<i>45,9%</i>	<i>44,9%</i>	<i>50,2%</i>	<i>43,2%</i>	<i>34,4%</i>
3. Withdrawal from reserves and the like	0,0	0,0	0,0	0,0	0,0	0,0
Expenditures	57.724,1	58.428,5	59.114,6	52.739,7	48.096,8	45.148,2
4.1 Personnel	29.783,2	28.386,4	27.663,2	23.201,3	19.903,1	18.291,7
4.2 Materials, supplies, equipment	23.428,3	22.491,4	23.413,5	20.875,4	18.062,9	16.321,3
4.3 Investments (except building investments)	2.656,6	6.296,2	5.302,1	6.522,0	7.757,3	6.322,7
4.4 Building investments	1.198,7	477,0	2.027,9	1.210,9	934,5	968,0
4.5 Special Positions (where applicable)	657,3	777,5	707,9	930,1	0,0	0,0
4.6 Allocations to reserves and the like	0,0	0,0	0,0	0,0	0,0	0,0
4.7 DFG-SFB 574 and 754	0,0	0,0	0,0	0,0	1.439,0	3.244,5
4.8 Joint Projects with Kiel University	0,0	0,0	0,0	0,0	0,0	0,0
4.9 For information only: DFG charges	706,7	671,8	632,3	611,5	600,8	588,2

Table 3.2: Project Funding

(Revenues in € 1,000)

	2011	2010	2009	2008	2007	2006
Total	28.110,7	27.943,5	26.652,2	28.761,9	21.411,6	16.128,0
- DFG (German Research Foundation)	4.412,8	5.250,3	7.098,7	4.712,5	6.409,0	2.952,0
- DFG-SFB 574 and 754	4.691,3	1.536,2	3.785,2	2.948,9	1.439,0	3.244,5
- Federal Government	7.714,2	10.335,0	6.380,8	5.877,8	5.539,4	4.599,5
- German "Länder"	376,9	324,8	311,3	418,5	1.499,1	1.307,3
- EU project funding	4.157,7	1.713,9	1.362,4	3.266,4	1.692,8	1.620,5
- Foundations, other research support	371,5	181,3	96,1	185,9	242,4	100,2
- Joint projects with Kiel University	0,0	0,0	0,0	0,0	0,0	0,0
- Services, contracts, licences, publications	4.439,0	7.186,7	5.721,8	9.441,6	3.098,0	1.098,4
- Other third-party resources	1.947,3	1.415,3	1.895,9	1.910,3	1.491,9	1.205,6
RD 1: Ocean Circulation and Climate Dynamics	5.056,5	5.174,2	6.392,1	3.855,3	3.769,9	2.937,7
- DFG (German Research Foundation)	1.197,2	1.181,9	2.282,0	992,5	1.687,9	621,3
- DFG-SFB 574 and 754	939,8	266,4	1.351,8	85,9	71,5	1.702,6
- Federal Government	2.272,2	2.572,5	2.140,0	1.883,0	1.715,9	353,2
- German "Länder"	0,0	0,0	0,0	0,0	0,0	0,0
- EU project funding	480,1	985,6	486,2	726,7	202,1	72,3
- Foundations, other research support	54,6	2,0	0,0	26,5	7,4	0,0
- Joint projects with Kiel University	0,0	0,0	0,0	0,0	0,0	0,0
- Services, contracts, licences, publications	112,6	165,8	132,1	140,7	85,1	188,3
- Other third-party resources	0,0	0,0	0,0	0,0	0,0	0,0

continued on next page.

Table 3.2: Project Funding (continued)

- classified by organisational unit -

(Revenues in € 1,000)

	2011	2010	2009	2008	2007	2006
RD 2: Marine Biogeochemistry	9.724,1	9.492,4	6.261,3	6.897,5	4.027,3	3.270,0
- DFG (German Research Foundation)	918,6	1.349,1	1.628,8	1.570,5	1.648,1	529,7
- DFG-SFB 574 and 754	2.131,2	680,8	869,4	2.164,7	276,9	380,2
- Federal Government	3.626,8	5.990,4	2.808,8	1.938,0	1.756,1	1.127,9
- German "Länder"	0,0	-0,6	-3,4	96,7	0,0	29,8
- EU project funding	2.071,5	386,6	940,0	1.025,7	244,0	1.038,6
- Foundations, other research support	14,4	12,8	2,4	0,0	0,0	0,6
- Joint projects with Kiel University	0,0	0,0	0,0	0,0	0,0	0,0
- Services, contracts, licences, publications	961,6	1.073,3	15,3	101,9	102,2	163,2
- Other third-party resources	0,0	0,0	0,0	0,0	0,0	0,0
RD 3: Marine Ecology	4.156,4	4.222,5	2.885,9	4.140,2	3.754,7	2.628,5
- DFG (German Research Foundation)	786,3	684,3	479,0	512,2	555,6	217,0
- DFG-SFB 574 and 754	33,7	18,0	60,5	2,5	0,0	0,0
- Federal Government	315,7	296,6	124,3	127,9	403,1	773,1
- German "Länder"	376,9	325,4	296,5	288,5	1.479,0	1.204,0
- EU project funding	1.234,7	201,8	-154,8	1.188,1	836,3	99,5
- Foundations, other research support	252,8	138,7	51,7	153,1	236,6	99,6
- Joint projects with Kiel University	0,0	0,0	0,0	0,0	0,0	0,0
- Services, contracts, licences, publications	1.156,3	2.557,7	2.028,7	1.867,9	244,1	235,3
- Other third-party resources	0,0	0,0	0,0	0,0	0,0	0,0

Table 3.2: Project Funding (continued)

- classified by organisational unit -

(Revenues in € 1,000)

	2011	2010	2009	2008	2007	2006
RD 4: Dynamics of the Ocean Floor	3.505,4	3.630,4	4.511,9	4.288,1	5.501,0	5.570,3
- DFG (German Research Foundation)	803,4	1.446,4	1.884,9	1.373,0	2.306,4	1.385,4
- DFG-SFB 574 and 754	1.229,9	318,4	965,6	593,1	1.090,6	1.161,7
- Federal Government	641,3	1.239,7	1.288,4	1.691,7	1.362,8	2.218,6
- German "Länder"	0,0	0,0	-1,8	33,3	20,1	73,5
- EU project funding	268,1	77,9	91,0	211,4	410,4	410,1
- Foundations, other research support	5,0	0,0	7,3	0,0	-1,6	0,0
- Joint projects with Kiel University	0,0	0,0	0,0	0,0	0,0	0,0
- Services, contracts, licences, publications	557,7	548,0	276,5	385,6	312,3	321,0
- Other third-party resources	0,0	0,0	0,0	0,0	0,0	0,0
Central Facilities	5.668,3	5.424,0	6.601,0	9.580,8	4.358,7	1.721,5
- DFG (German Research Foundation)	707,3	588,6	824,0	264,3	211,0	198,6
- DFG-SFB 574 and 754	356,7	252,6	537,9	102,7	0,0	0,0
- Federal Government	858,2	235,8	19,3	237,2	301,5	126,7
- German "Länder"	0,0	0,0	20,0	0,0	0,0	0,0
- EU project funding	103,3	62,0	0,0	114,5	0,0	0,0
- Foundations, other research support	44,7	27,8	34,7	6,3	0,0	0,0
- Joint projects with Kiel University	0,0	0,0	0,0	0,0	0,0	0,0
- Services, contracts, licences, publications	1.650,8	2.841,9	3.269,2	6.945,5	2.354,3	190,6
- Other third-party resources	1.947,3	1.415,3	1.895,9	1.910,3	1.491,9	1.205,6

Appendices

3.2 Projects

Research Division 1: Ocean Circulation and Climate Dynamics

No.	Shorttitle/Framework	Research theme	Funding Agency	Lead PI	Funding period	Budget ¹
1	M83/1+2 Koordination	M83/1: Deliberate-tracer survey and hydrography in the northern tropical Atlantic (GUTRE-IV) M 83/2: Biodiversität und biologische Produktion an einem flachen nordostatlantischen Seamount (Ampere Seamount)	DFG	Prof. Visbeck	01.06.2010 - 31.03.2011	4.626,00
2	MSM 18 Koordination	MSM 18 Koordination	DFG	Prof. Brandt	01.01.2011 - 31.12.2011	5.470,00
3	M84/5	Fahrtabschnitt M 84/5: Biogeochemie und Methanhydrate des Schwarzen Meeres; Ozeanographie des Mittelmeeres, Schelfsedimentation und Kaltwasserkorallen	DFG	Dr. Flögel	01.01.2011 - 31.12.2011	29.000,00
4	Golfstrom 446 JAP 113/350/0-1	Wissenschaftliche Zusammenarbeit mit Japan (JSPS) Kooperationsprojekt: Atmospheric response to Gulf Stream and Kuroshio variability: Its role in the climate system	DFG	Dr. Keenlyside	01.08.2010 - 01.10.2011	23.260,00
5	HOSINIL BL 1112/1-1	Rekonstruktion von Klimaschwankungen im nördlichen subtropischen Afrika während des Holozäns auf Zeitskalen von Jahreszeiten bis Jahrtausenden: Zusammenhänge zwischen Niederschlag, Vegetation und Erosionsdynamik anhand von laminierten Sedimenten des Nil-S	DFG	Dr. Blanchet	01.04.2010 - 30.09.2012	194.330,00
6	BL 1112/2-1	Tracing the source of deep water in the Bering Sea on glacial/ interglacial and millennial time scales during the past 4 Ma	DFG	Dr. Blanchet	01.10.2011 - 30.09.2012	23.150,00
7	R`Eddy BO 907/4-1	Effects of eddy variability on the response of the ACC to global warming (R`Eddy)	DFG	Prof. Böning	01.01.2010 - 31.12.2012	243.150,00
8	Datenmanagerin EXC 80 CLUSTER	Datenmanagerin EXC Ocean der Zukunft	DFG	Prof. Visbeck	01.11.2011 - 30.09.2012	60.000,00
9	Boknis Eck Workshop CLUSTER	Boknis Ecik Time Series Station Workshop	DFG	Prof. Visbeck	01.01.2011 - 31.12.2011	2.500,00
10	Datenmanagerin CLUSTER	Datenmanagerin	DFG	Prof. Visbeck	15.10.2008 - 30.10.2011	178.850,00
11	Glider fleet CLUSTER - 2009/1 CP0938	Glider fleet to observe sub-mesoscale physical-biogeochemical coupling in the tropical ocean	DFG	Prof. Kanzow	01.11.2009 - 30.06.2011	100.000,00
12	CLUSTER - Overhead-Sprecher	Cluster Overhead Sprecher	DFG	Prof. Visbeck	01.01.2007 - 31.10.2011	906.750,00

No.	Shorttitle/Framework	Research theme	Funding Agency	Lead PI	Funding period	Budget ¹
13	DE 1369/1-1	Emmy Noether-Programm: Diapyknische Vermischungsprozesse in den Auftriebsgebieten des tropischen Atlantiks.	DFG	Dr. Dengler	01.08.2008 - 31.07.2011	368.680,00
14	Zirkulation im Klimawandel DO 1038/5-1	Moden der nördlichen atmosphärischen Zirkulation im Rahmen des Klimawandels	DFG	Prof. Dommenget	01.09.2009 - 31.08.2012	111.045,00
15	ISOLDE DU 129/45-3	Isotope Signature of calcareous Organisms from upper and Lower carbonate mound sediments	DFG	Prof. Dullo	01.06.2010 - 31.05.2011	52.370,00
16	OPOKA Water DU 129/46-1	Hydrography der Oberflächen- und Zwischenwassermassen, planktonische und benthische Biota in der karibische See-Klima, Bio-, und Geosphären Vernetzung	DFG	Prof. Dullo	01.09.2011 - 31.08.2014	26.620,00
17	ED 159/3-1	Impact of physically relevant and numerically induced diapycnal mixing and meso-scale dissipation on meridional mass and tracer transports in the Southern Ocean	DFG	Dr. Eden	01.01.2010 - 31.12.2012	20.200,00
18	Late Cretaceous II FR 1198/10-2	The Campanian - Maastrichtian (Late Cretaceous) climate transition: the history of palaeoceanographic changes	DFG	Prof. Frank	01.09.2011 - 31.08.2012	4.340,00
19	Arctic-Atlantic X-Change FR 1198/6-2	Reconstructing water mass exchange and climate variability in the northernmost Atlantic and Arctic Oceans during the beginning of Quaternary	DFG	Prof. Frank	01.09.2011 - 31.08.2012	56.290,00
20	Late Cretaceous FR 1198/7-1	The Campanian - Maastrichtian (Late Cretaceous) climate transition: the history of palaeoceanographic changes	DFG	Prof. Frank	01.01.2010 - 31.12.2011	8.400,00
21	Evolution of CAS FR 1198/8-1	Reconstruction of the Timing of Water Mass Exchange during Progressive Closure of the Central American Seaway in Pliocene	DFG	Prof. Frank	01.10.2010 - 30.09.2012	174.100,00
22	Water mass mixing FR 1198/9-1	Water mass mixing and silicate utilization in the Atlantic Ocean	DFG	Prof. Frank	01.08.2011 - 31.07.2014	178.000,00
23	GR 3653/2-1	Influence of the ocean surface velocity dependence of the wind stress on the dynamics of the Southern Ocean	DFG	Prof. Greatbatch	01.01.2010 - 31.12.2012	182.800,00
24	PEAT HA 5751/2-1	Erhaltung geochemischer Proxies in Foraminiferen: Karbonatdiagenese aus dem IODP Pacific Equatorial Age Transect (PEAT) natürliches Labor	DFG	Dr. Hathorne	01.10.2010 - 30.09.2013	127.250,00
25	Arctic-Atlantic X-Change HA 5938/1-1	Orbital variability and high latitude circulation and climate change during the Pliocene-Pleistocene	DFG	Prof. Frank	01.09.2009 - 31.05.2012	86.550,00
26	Mid-Atlantic Ridge KA 3204/2-1	Process study of vertical mixing near the floor inside the central valley of the Mid-Atlantic Ridge near 37° N	DFG	Prof. Kanzow	01.11.2010 - 30.10.2013	287.783,00
27	Emmy Noether Programm KE 1471/2-1	Mechanismus and predictability of North Atlantic Decadal Climate variability	DFG	Dr. Keenlyside	01.01.2008 - 31.12.2012	926.950,00

Appendices

No.	Shorttitle/Framework	Research theme	Funding Agency	Lead PI	Funding period	Budget ¹
28	Emmy Noether Pr. II KE 1471/2-1	Mechanismen und Vorhersagbarkeit der Nordatlantischen Variabilität auf dekadischen Zeitskalen	DFG	Dr. Keenlyside	01.03.2011 - 28.02.2012	239.450,00
29	PLIONAMOC KH 280/1-1	Mid-Pliocene North Atlantic water mass distribution and Meridional Overturning Circulation	DFG	Dr. Khelifi	01.07.2010 - 30.06.2011	96.760,00
30	PLIONAMOC KH 280/1-2	PLIONAMOC Pliocene North Africa water mass distribution and Meridional Overturning Circulation, 3.3-3.0 Ma	DFG	Dr. Khelifi	01.07.2011 - 30.06.2012	94.650,00
31	ENSO LA 871/5-2	Wechselwirkung im ENSO Recharge Oscillator Model	DFG	Prof. Latif	07.07.2010 - 30.06.2011	73.600,00
32	ICIS 2 NI 1248/1-2	Interglacial conditions of the Iceland Sea (ICIS)	DFG	Dr. van Nieuwenhove	01.07.2011 - 31.12.2011	38.175,00
33	LOOP 3 NU 60/17-3	Die Variabilität des LOOP-Stromsystems und seine Beziehung zur thermohalinen Zirkulation und zum Mississippi-Ausstrom	DFG	Dr. Nürnberg	01.08.2010 - 31.03.2012	78.505,00
34	ECHO RA 2156/1-1	ECHO-Intermediate water mass history at a Cold -water coral Habitat in the North Atlantic. Geochemicals signals from IODP Site 1317	DFG	Dr. Raddatz	01.11.2011 - 31.10.2012	84.350,00
35	Planktonforaminiferen in der K SCH 605/8-1	Geochemische Charakterisierung von Planktonforaminiferen in der Karibik	DFG	Dr. Schönfeld	01.09.2011 - 31.08.2014	191.680,00
36	Benthic foraminifera Scho 605/7-1	Benthic foraminifera under elevated CO2 conditions	DFG	Dr. Schönfeld	01.10.2010 - 30.09.2012	101.932,00
37	HOVAG 2 SP 526/4-2	Holocene Variability in the Arctic Gateway	DFG	Dr. Spielhagen	01.02.2010 - 31.01.2012	108.000,00
38	PHEWEX WE 2686/5-1	Centennial-scale variability of past heat and water mass exchange across the eastern equatorial Atlantic Basin	DFG	Prof. Frank	01.09.2010 - 31.08.2013	13.300,00
39	PHEWEX WE 2686/5-2	Centennial-scale variability of past heat and water mass exchange across the eastern equatorial Atlantic Basin	DFG	Prof. Frank	01.01.2009 - 31.12.2011	160.450,00
40	Joint Outreach Programm	Volatile Fluide in Subduktionszonen: Klima-Rückkopplungen und Auslösemechanismen von Naturkatastrophen. Teilprojekt ÖA "A Joint Outreach Program of SFB 754 & 574	DFG-SFB574	Dr. Dengg	01.01.2009 - 30.06.2012	324.600,00
41	TP C05	TP C05. Modellierung von Klimaeffekten/Rückkopplungen und Subduktionsprozessen	DFG-SFB574	Prof. Krüger	01.07.2008 - 30.06.2012	296.030,00
42	TP A01	TP A01 - Antwort des gekoppelten Systems Klima-Biogeochemie in den Tropen auf globaler Erwärmung	DFG-SFB754	Prof. Latif	01.01.2008 - 31.12.2011	152.000,00
43	TP A02	TP A02: Hochaufgelöste Modellierung der physikalisch-biogeochemischen Interaktionen im tropischen Ozean	DFG-SFB754	Prof. Böning	01.01.2008 - 31.12.2011	310.000,00

No.	Shorttitle/Framework	Research theme	Funding Agency	Lead PI	Funding period	Budget ¹
44	TP A03	TP A03: Diapyknische und Isopyknische Vermischung an der Südflanke des Guinea Auftriebsgebietes: Ein Tracer Release Experiment	DFG-SFB754	Prof. Visbeck	01.01.2008 - 31.12.2011	193.200,00
45	TP A04	TP A04: Trends und Variabilität von Sauerstoffinventar und -versorgung in Sauerstoffminimumzonen	DFG-SFB754	Prof. Brandt	01.01.2008 - 31.12.2011	311.500,00
46	TP A05	TP A05: Bedeutung der Wassermassenstruktur im östlichen tropischen Pazifik für Sauerstoffvariabilität und geochemische Zusammensetzung	DFG-SFB754	Dr. Stramma	01.01.2008 - 31.12.2011	284.900,00
47	TP A05	TP A05: Bedeutung der Wassermassenstruktur im östlichen tropischen Pazifik für Sauerstoffvariabilität und geochemische Zusammensetzung	DFG-SFB754	Prof. Frank	01.01.2008 - 31.12.2011	284.900,00
48	TP A06	TP A06: Klimawandel und Sauerstoffminimum-Bedingungen auf 100-1000 Jahre Zeitskalen	DFG-SFB754	Prof. Dullo	01.01.2008 - 31.12.2011	200.300,00
49	TP B07	TP B07: Biogeochemische und mikropaläontologische Rekonstruktion des Sauerstoffgehalts und der Redoxbedingungen der Vergangenheit in Küstenauftriebsgebieten	DFG-SFB754	Prof. Frank	01.01.2008 - 31.12.2011	334.600,00
50	TP Z02	TP Z02: Expeditionskosten für die SFB Schiffsreisen	DFG-SFB754	Dr. Stramma	01.01.2008 - 31.12.2011	438.300,00
51	BALTIC WAY	ERANET-BOUNS: Verbundprojekt BONUS-174: BALTICWAY - Die Bedeutung von Strömungen für das Umweltmanagement für die maritime Industrie im Ostseegebiet; Vorhaben: TP1	BMBF	Dr. Lehmann	01.01.2009 - 31.12.2011	127.894,00
52	TORUS 01LP1111B	Verbundprojekt: TORUS -Towards Regionally focused modelling of decadal climate predictions. Hydrographic data of the Arctic key region for initialization and validation of decadal prediction systems	BMBF	Dr. Dmitrenko	01.11.2011 - 31.10.2015	147.087,00
53	OCEANOBS 01LP1114A	MiKlip: Verifizierung von Ensembles und Initialisierungsfeldern für Dekadische Klimavorhersagen über Ozean Beobachtungs Systeme (OCEANOBS), Modul E	BMBF	Prof. Visbeck	01.11.2011 - 31.08.2015	345.302,00
54	ALARM 01LP1130B	Verbundprojekt: Berücksichtigung großer Vulkanausbrüche bei mittelfristigen Klimaprognosen (ALARM, Alert for LARge volcanic eruptions in Medium term climate prediction) TP2 (Modul B)	BMBF	Prof. Krüger	01.11.2011 - 31.10.2015	156.033,00
55	MODINI 01LP1134B	Model initialization by partially couple spin-up Verbundprojekt: Modellinitialisierung mit teilweise gekoppelten Spin-up (Modini)	BMBF	Prof. Greatbatch	01.09.2011 - 31.08.2015	186.343,00
56	ATMOS 01LP152A	Computersimulationen zum atlantischen Atmosphäre/ozean-System (ATMOS: Atlantic Model Studies (Modul B))	BMBF	Prof. Greatbatch	01.09.2011 - 31.08.2015	214.573,00

Appendices

No.	Shorttitle/Framework	Research theme	Funding Agency	Lead PI	Funding period	Budget ¹
57	CIESM 03CIE004	CIESM: Internationale Kommission für die wissenschaftliche Erforschung des Mittelmeeres. Deutscher Beitrag	BMBF	Prof. Dullo	01.01.2010 - 31.12.2012	187.500,00
58	Nordatlantik, AP 1.1 03F0605B	Verbundprojekt: Nordatlantik - Teil des Erdsystems; Vorhaben: Klimaschwankungen und ihre Auswirkungen auf die thermohaline Zirkulation im Nordatlantik	BMBF	Prof. Latif	01.10.2009 - 30.09.2012	253.058,00
59	Nordatlantik, AP 1.2 03F0605B	Verbundprojekt: Nordatlantik - s.o.	BMBF	Prof. Brandt	01.10.2009 - 30.09.2012	528.147,00
60	Nordatlantik, AP 2.2 03F0605B	Verbundprojekt: Nordatlantik - s.o.	BMBF	Prof. Visbeck	01.10.2009 - 30.09.2012	255.775,00
61	Nordatlantik, AP 3.2 03F0605B	Verbundprojekt: Nordatlantik - s.o.	BMBF	Prof. Böning	01.10.2009 - 30.09.2012	202.648,00
62	SOPRAN II 03F0611A TP 2	SOPRAN II TP 2: The contribution of physical processes to the emissions of trace gases in upwelling areas of the equatorial Atlantic Ocean: A N2O case study	BMBF	Prof. Brandt	01.02.2010 - 31.01.2013	136.414,25
63	SOPRAN II 03F0611A TP 4	SOPRAN II TP4: Die Reaktion von kleinen und meso-skalierten Prozessen in der oberen Ozeanschicht auf atmosphärischen Antrieb	BMBF	Dr. Eden	01.02.2010 - 31.01.2013	102.546,00
64	SO 205 Mangan 03G0205	SO 205: Erstellung von Zeitreihen an Manganknollen mittels radiogener (Sr, NS usw.) und nicht-traditionellen Isotopensystemen (d88/86Sr,d98/100Mo)	BMBF	Prof. Frank	01.02.2010 - 31.01.2013	65.625,00
65	SO 213 - SOPATRA 03G0213B	SO 213 - SOPATRA & FOUNDATION IV. Verbundprojekt SOPATRA: Rekonstruktion der pleistozänen atmosphärisch-ozeanischen Zirkulation im Südpazifik; Vorhaben: Paläotemperaturen und -salinitäten in der ozeanischen Deckschicht, Rekonstruktion der Tiefenwasserzirkulation	BMBF	Dr. Nürnberg	01.11.2010 - 31.12.2012	288.693,00
66	KALMAR II 03G0672A TP1	KALMAR II Leitantrag - Kurile Kamchatka an Aleuten Marginal Sea Island Arc Systems: Geodynamic and Climate Interaction in Space and Time	BMBF	Prof. Dullo	01.01.2009 - 31.12.2011	390.688,00
67	KALMAR II 03G0672A TP4	KALMAR II TP 4 - Kurile Kamchatka an Aleuten Marginal Sea Island Arc Systems: Geodynamic and Climate Interaction in Space and Time	BMBF	Dr. Nürnberg	01.01.2009 - 31.12.2011	208.285,00
68	Polynja II 03G0759A	System-Laptev See: Eurasische Schelfmeere im Umbruch - Ozeanische Fronten und Polynjasysteme in der Laptev-See - Teilprojekt 1: Jahreszeitliche Abläufe und Koordination, Verbundvorhaben "Russisch-deutsche Zusammenarbeit" Anschlusszuwendung	BMBF	Dr. Kassens	01.04.2010 - 31.03.2012	1.823.267,00

No.	Shorttitle/Framework	Research theme	Funding Agency	Lead PI	Funding period	Budget ¹
69	MSM 19/1-SPACES 03G0822A	WTZ Südliches Afrika: Ausbildungsfahrt mit dem Forschungsschiff MERIAN in Namibia (MSM 19/1) -SPACES	BMBF	Prof. Visbeck	01.06.2011 - 30.12.2011	14.800,00
70	OSL- Stipendienprogramm 03PL040A	OSL: Stipendienprogramm für das Otto-Schmidt-Labor für Polar- und Meeresforschung: Umweltsysteme im Umbruch	BMBF	Dr. Kassens	01.01.2009 - 31.12.2011	637.050,00
71	OSL Investitionen 2011 03PL042A	WTZ RUS Klimaforschung in der Arktis: Otto-Schmidt-Labor für Polar- Gerätebeschaffung 2011	BMBF	Dr. Kassens	01.08.2011 - 31.12.2011	149.705,00
72	Fischereimanagement 3509820300	Ökosystemgerechtes Fischereimanagement in marinen Schutzgebieten	BMBF	Prof. Visbeck	01.09.2009 - 30.11.2011	242.099,00
73	Stipendiaten POMOR 2 50733296	Stipendien für Teilnehmer und Absolventen deutscher Studiengänge im Ausland	BMBF	Dr. Kassens	01.07.2010 - 15.08.2011	79.390,00
74	Koop Australien AUS 10/040	Struktur und Entwicklung von Dipol-Anomalien im Indischen Ozean in hochauflösenden Ozeanmodellen. Internationale Zusammenarbeit in Bildung und Forschung mit Australien	BMBF	Prof. Böning	01.09.2010 - 31.03.2012	5.640,00
75	POMOR II RUS 10/002	POMOR - Deutsch-russischer Masterstudiengang für angewandte Meeres- und Polarwissenschaften	BMBF	Dr. Kassens	01.05.2010 - 31.10.2011	145.910,00
76	Lebende Ausstellung RUS 11/39J	Lebende Ausstellung - Brennpunkte der deutsch--russischen Zusammenarbeit auf dem Gebiet der Meere und Polarforschung	BMBF	Dr. Kassens	01.06.2011 - 31.05.2012	164.177,00
77	Inern. Zus. Südafrika SUA 07/004	Das Agulhas-System als Schlüsselregion der globalen ozeanischen Zirkulation	BMBF	Dr. Biastoch	04.04.2008 - 31.03.2011	12.408,00
78	Intern. Zus. Südafrika SUA 07/004	Das Agulhas-System als Schlüsselregion der globalen ozeanischen Zirkulation	BMBF	Dr. Biastoch	01.03.2011 - 31.12.2011	2.912,00
79	Meeresnaturschutz 3508850700	Klimawandel-bedingte Anforderung an Maßnahmen des Meeresnaturschutzes in Nord- und Ostsee	BfN	Prof. Visbeck	01.01.2011 - 29.02.2012	78.178,85
80	18122008 My Ocean	My Ocean - Development and pre-operational validation of upgraded GMES Marine Core Services and capabilities	EU	Prof. Böning	01.01.2009 - 31.03.2012	195.457,00
81	Thor 212643 TP 1	THOR - Thermohaline Overturning - at Risk	EU	Prof. Latif	01.01.2009 - 31.12.2012	419.189,29
82	Thor 212643 TP 2	THOR - Thermohaline Overturning - at Risk	EU	Prof. Visbeck	01.01.2009 - 31.12.2012	479.226,13
83	Thor 212643 TP 3	THOR - Thermohaline Overturning - at Risk	EU	Dr. Biastoch	01.01.2009 - 31.12.2012	479.984,58
84	SHIVA 226224	Stratospheric Ozone: Halogen Impact in a Varying Atmosphere	EU	Prof. Krüger	01.07.2009 - 30.06.2012	261.333,50

Appendices

No.	Shorttitle/Framework	Research theme	Funding Agency	Lead PI	Funding period	Budget ¹
85	238111 - CASE	CASE - The changing Arctic and Sub-arctic Environment: A research and training programme on marine biotec indicators of recent climate changes in the high latitudes of the North Atlantic.	EU	Dr. Spielhagen	01.04.2010 - 31.03.2014	420.279,00
86	266722 SUMO	Supermodeling by combining imperfect models	EU	Dr. Keenlyside	01.10.2010 - 30.09.2013	343.756,00
87	GROOM 284321	Gliders for Research, Ocean Observation and Management	EU	Dr. Karstensen	01.10.2011 - 30.09.2014	427.720,00
88	EuroSITES	European Ocean Observatory Network	EU	Dr. Karstensen	01.04.2008 - 31.03.2011	186.720,00
89	FP7-PEOPLE-2010-IEF LINKWEHTERINGCO2	How does weathering link to atmospheric carbon dioxide - evidence from past extreme climate events Fellow: Dr. Philip Arvid Edward Pogge von Strandmann	EU	Prof. Frank	01.10.2011 - 30.09.2013	162.242,40
90	PITN-GA-2009-238512 GATEWAYS	Multi-level assessment of ocean-climate dynamics: a gateway to interdisciplinary training and analysis	EU	Dr. Biastoch	01.01.2010 - 31.12.2013	208.333,68
91	Stipendium Anne Osborne GRO 1136480 STP-2	Forschungskostenzuschuss für Anne Osborne	AvH	Prof. Frank	01.10.2010 - 30.09.2012	73.200,00
92	NaT-Working Botschafter 32.5.8051.0170.0	Durchführung von Vernetzungsaktivitäten als NaT-Working Botschafter	Robert Bosch Stfg.	Dr. Dengg	15.08.2010 - 14.08.2012	38.000,00
93	Frühwarnsysteme	Frühwarnsysteme für globale Klimaveränderungen und ihre historische Dokumentation in natürlichen Klimaarchiven	AdW	Dr. Spielhagen	01.06.2005 - 31.12.2011	152.324,23
94	PLEIADES 85 423	Projections and predictions of Local Precipitation Intensities. Advanced Downscaling using Extrreme value Statistics (PLEIADES)	Sonstige	Prof. Maraun	01.06.2011 - 31.12.2013	170.100,00
95	Aufenthalt F. Ogawy	Initiative: Wissenschaftler helfen japanischen Kollegen Aufenthalt Dr. Fumiaki Ogawa	Sonstige	Dr. Omrani	01.07.2011 - 31.08.2011	3.494,58
96	GLUES Unterauftrag	Global Assessment of Land Use Change on Greenhouse Gas Emissions and Ecosystem Service	Sonstige	Prof. Latif	01.01.2011 - 31.05.2011	23.020,00
97	Rapid Climate Changes in High NRSFP 984388	Rapid Climate Changes in the High Latitudes: Mechanisms and Consequences	Sonstige	Prof. Latif	01.12.2011 - 30.11.2012	7.000,00
						19.997.174,49

¹ Total Budget over the complete funding period

Research Division 2: Marine Biogeochemistry

No.	Shorttitle/Framework	Research theme	Funding Agency	Lead PI	Funding period	Budget ¹
1	Climate Engineering	Vorbereitung eines interdisziplinären nationalen Forschungsprojektes zum Thema Climate Engineering	DFG	Prof. Oschlies	01.11.2011 - 31.10.2012	50.550,00
2	M84/3	Fahrtabschnitt M 84/3: Biogeochemie und Methanhydrate des Schwarzen Meeres; Ozeanographie des Mittelmeeres, Schelfsedimentation und Kaltwasserkorallen	DFG	Dr. Tanhua	01.01.2011 - 31.12.2011	74.920,00
3	M86/5	M86/5: To investigate the extent and geological setting of seefloor hydrothermal systems in the Tyrrhenian Sea 23.2.11 - 16.3.12 Palma de Mallorca-Lissabon	DFG	Dr. Hensen	01.10.2011 - 30.09.2012	153.776,00
4	5th intern. SOLAS summerschool BA 1990/13-1	5 th international SOLAS Summerschool 2011 29.08.11-10.09.11	DFG	Dr. Bange	01.07.2011 - 31.12.2011	20.753,00
5	Seafloor Warming CLUSTER	Technische Unterstützung zur Analyse von mikrobiellen Proben während Poseidon Expedition (PO419)	DFG	Prof. Treude	01.11.2011 - 31.12.2011	11.700,00
6	Climate Engineering CLUSTER	Vorbereitung eines interdisziplinären nationalen Forschungsprojektes zum Thema Climate Engineering	DFG	Prof. Oschlies	01.07.2011 - 31.10.2011	11.350,00
7	Seafloor Warming Effect CLUSTER	CLUSTER: A2. Seafloor Warming Effect	DFG	Prof. Treude	01.01.2008 - 30.11.2011	800.000,00
8	High-resolution CLUSTER - 2009/1 CP0910	A novel system for continuous high-resolution measurements of atmospheric and dissolved N ₂ O	DFG	Dr. Bange	01.11.2009 - 30.06.2011	100.000,00
9	Nitrogen fixation in sed. CLUSTER - 2009/1 CP0911	The occurrence and relevance of nitrogen fixation in sediments of oxygen minimum zones	DFG	Prof. Treude	01.11.2009 - 30.06.2011	73.500,00
10	Seafloor warming on oxygen CLUSTER - 2009/1 CP0915	Novel, non-invasive investigation of seafloor warming oxygen and heat fluxes from the benthic boundary layer into the water column	DFG	Dr. Linke	01.11.2009 - 30.06.2011	100.000,00
11	Photolysis of carbonyl C CLUSTER - 2009/1 CP0918	Photolysis of Carbonyl Compound in seawater: Primary Products, Quantum Yields and Loss Rates in Natural Sunlight	DFG	Dr. Croot	01.11.2009 - 30.06.2011	13.000,00
12	Zooplankton in trop. Oxy CLUSTER - 2009/1 CP0923	The role zooplankton in tropical oxygen minimum layers: physiological adaptation and contribution to fluxes of carbon and oxygen	DFG	Dr. Kiko	01.11.2009 - 30.06.2011	100.000,00
13	Jelly Pump CLUSTER - 2009/1 CP0927	Does the "rise of slime" foster an oceanic "jelly carbon pump?"	DFG	Prof. Oschlies	01.11.2009 - 30.06.2011	100.000,00

Appendices

No.	Shorttitle/Framework	Research theme	Funding Agency	Lead PI	Funding period	Budget ¹
14	Magnesium Isotope Fract. CLUSTER - 2009/1 CP0932	Magnesium Isotope Fractionation in Planktic Foraminifera as a Proxy for Sea Surface pH Variations	DFG	Prof. Eisenhauer	01.11.2009 - 30.06.2011	93.500,00
15	Saharan Dust CR 145/17-1	Mn and Cu speciation in the Tropical Atlantic: influence of Saharan dust, phytoplankton exudation and ROS (H ₂ O ₂ and O ₂)	DFG	Dr. Croot	01.12.2009 - 30.11.2012	123.950,00
16	ADIOS-BAO CR 145/18-1	Atmospheric dust and Irradiation effects on Ocean Surface processes - Biogeochemistry in the Atlantic Ocean (ADIOS-BAO)	DFG	Dr. Croot	01.03.2010 - 28.02.2011	28.914,00
17	CO ₂ eddy DI 1665/1-1	Einfluss von Parametrisierungen mesoskaliger Wirbel in IPCC-relevanten Ozeanmodellen auf die Relation zwischen Windantrieb und dem Kohlenstoffaustausch zwischen Ozeanen und Atmosphäre im Südlichen Ozean	DFG	Prof. Oschlies	01.04.2010 - 31.03.2012	117.800,00
18	QUASAR EI 272/29-1	Die Quantifizierung des marinen Sr-Haushaltes mittels radiogener (⁸⁷ Sr/ ⁸⁶ Sr) und stabiler (⁸⁶ Sr/ ⁸⁸ Sr) Sr-Isotopenverhältnisse	DFG	Prof. Eisenhauer	01.07.2009 - 30.06.2012	103.873,00
19	TRION EI 272/30-1	TRION- Stable isotopes of strontium as a new proxy for continental weathering, pedogenesis processes and seawater temperature	DFG	Prof. Eisenhauer	01.06.2010 - 31.05.2012	836.800,00
20	Kalzitadern EI 272/31-1	Kalzitadern in der Ozeankruste als Archive für die Entwicklung der stabilen Strontium-Isotope der Meere	DFG	Prof. Eisenhauer	01.09.2011 - 31.08.2012	84.700,00
21	Floatbasierte Langzeitbeobacht KO 1717/3-1	Floatbasierte Langzeitbeobachtung der Sauerstoffdynamik in wichtigen kontrastierenden Ozeanregionen und biogeographischen Provinzen	DFG	Prof. Körtzinger	01.06.2011 - 31.05.2014	197.200,00
22	Stickstofffixierung LA 2919/1-1	Stickstofffixierung in globalen marinen biogeochemischen Modellen: Können Trade-Offs in modellierten Phosphoraquisitionstrategien das marine Stickstofffixierungsparadoxon erklären?	DFG	Dr. Landolfi	01.05.2011 - 30.04.2014	221.550,00
23	MethaneFlux MC 214/1-1	Methane Emissions from Impounded Rivers: A process-based study at the River Saar	DFG	Dr. McGinnis	01.07.2010 - 30.06.2013	36.020,00
24	Warming and trophic state OS 175/5-1	Modelling the impact of global warming on the trophic state of the upper ocean	DFG	Prof. Oschlies	01.03.2010 - 28.02.2013	153.300,00
25	Zooplankton-gemeinschaften PA 1847/2-1	Optimalitätsbasiertes Modell mariner Zooplanktongemeinschaften	DFG	Dr. Pahlow	01.06.2010 - 31.05.2013	141.000,00
26	Kohlenstoffdynamik TA 317/5-1	Kohlenstoff- und transienten Tracer-Dynamik: Eine bi-polare Sichtweise auf Süd-Ozean-Eddies und den sich verändernden Arktischen Ozean	DFG	Dr. Tanhua	01.09.2011 - 31.08.2014	209.250,00

No.	Shorttitle/Framework	Research theme	Funding Agency	Lead PI	Funding period	Budget ¹
27	Zirkulation des Mittelmeeres TA 3173-1	Chemistry and circulation of the Mediterranean Sea Chemische Parameter und Zirkulation des Mittelmeeres	DFG	Dr. Tanhua	01.11.2011 - 31.10.2012	120.613,00
28	TP B03	TP B03: Benthischer Volatilen-Ausstrom und Umsatz: Mechanismen und Budgets	DFG-SFB574	Dr. Linke	01.07.2008 - 30.06.2012	307.900,00
29	TP B05	TP B05: Diagenetische Prozesse in Forearc Sedimenten und der Volatileintrag in Subduktionszonen Systeme: Akkumulation, Transport und Freisetzung von Volatilen	DFG-SFB574	Dr. Hensen	01.07.2008 - 30.06.2012	344.050,00
30	TP B06	TP B06 - Authigene Karbonate als Langzeitarchiv für Fluidfreisetzung	DFG-SFB574	Prof. Eisenhauer	01.07.2008 - 30.06.2012	125.800,00
31	TP A01	TP A01 - Antwort des gekoppelten Systems Klima-Biogeochemie in den Tropen auf globaler Erwärmung	DFG-SFB754	Prof. Oeschies	01.01.2008 - 31.12.2011	152.000,00
32	TP A03	TP A03: Diapynische und Isopyknische Vermischung an der Südflanke des Guinea Auftriebsgebietes: Ein Tracer Release Experiment	DFG-SFB754	Prof. Wallace	01.01.2008 - 31.12.2011	193.200,00
33	TP A04	TP A04: Trends und Variabilität von Sauerstoffinventar und -versorgung in Sauerstoffminimumzonen	DFG-SFB754	Prof. Körtzinger	01.01.2008 - 31.12.2011	311.500,00
34	TP A07	TP A07: Ursachen und zeitlicher Verlauf von Einsetzen und Ausbreitung anoxischer Verhältnisse im Kreide-Ozean	DFG-SFB754	Prof. Wallmann	01.01.2008 - 31.12.2011	234.300,00
35	TP B01	TP B01: Ein globales Modell redox-sensitiver biogeochemischer Kreisläufe	DFG-SFB754	Prof. Oeschies	01.01.2008 - 31.12.2011	165.700,00
36	TP B01	TP B01: Ein globales Modell redox-sensitiver biogeochemischer Kreisläufe	DFG-SFB754	Prof. Wallmann	01.01.2008 - 31.12.2011	165.700,00
37	TP B02	TP B02: Reaktionen der Planktongemeinschaft auf Änderungen der Nährstoffstöchiometrie	DFG-SFB754	Prof. Riebesell	01.01.2008 - 31.12.2011	99.000,00
38	TP B03	TP B03: Sensitivität der biologischen Stickstofffixierung im Ozean gegenüber gelöstem Sauerstoff	DFG-SFB754	Prof. LaRoche	01.01.2008 - 31.12.2011	161.200,00
39	TP B04	TP B04: Stickstoffverlust und Nährstofferneuerung in Meerwasser mit einem Sauerstoffdefizit	DFG-SFB754	Prof. LaRoche	01.01.2008 - 31.12.2011	156.100,00
40	TP B05	TP B05: Auswirkungen niedriger Sauerstoffkonzentrationen auf dem Biogeochemischen Kreislauf von Eisen und Phosphat	DFG-SFB754	Dr. Hensen	01.01.2008 - 31.12.2011	230.300,00
41	TP B05	TP B05: Auswirkungen niedriger Sauerstoffkonzentrationen auf den Biogeochemischen Kreislauf von Eisen und Phosphat	DFG-SFB754	Dr. Croot	01.01.2008 - 31.12.2011	230.300,00
42	TP B06	TP B06: Redox-sensitive Stickstoffflüsse in der Bodengrenzschicht	DFG-SFB754	Prof. Eisenhauer	01.01.2008 - 31.12.2011	250.700,00

Appendices

No.	Shorttitle/Framework	Research theme	Funding Agency	Lead PI	Funding period	Budget ¹
43	TP Z01	TP Z01: Zentrale Aufgaben des Sonderforschungsbereiches	DFG-SFB754	Prof. Wallace	01.01.2008 - 31.12.2011	1.416.160,00
44	TP Z02	TP Z02: Expeditionskosten für die SFB Schiffsreisen	DFG-SFB754	Dr. Pfannkuche	01.01.2008 - 31.12.2011	438.300,00
45	TP Z1 Pauschale Mittel	SFB 754 Zentrale Aufgaben des Sonderforschungsbereiches. Hier: Pauschale Mittel	DFG-SFB754	Prof. Wallace	01.01.2009 - 31.12.2011	225.000,00
46	Stipendium Prof. Kunshan GAO	Stipendium Prof. Kunshan GAO, China	BMBF	Prof. Riebesell	01.06.2011 - 30.09.2011	6.795,00
47	FS SONNE Neubau 03F0477I	Nachfolgebau FS SONNE	BMBF	Dr. v. Bröckel	01.04.2008 - 31.03.2012	363.709,00
48	Nordatlantik, AP 3.3 03F0605B	Verbundprojket: Nordatlantik - Teil des Erdsystems; Vorhaben: Klimaschwankungen und ihre Auswirkungen auf die thermohaline Zirkulation im Nordatlantik	BMBF	Prof. Oeschies	01.10.2009 - 30.09.2012	230.530,00
49	BIOACID 03F0608A TP 0.1	Verbundprojekt BIOACID - Biologische Auswirkungen der Ozeanversauerung Vorhaben: Koordination ; Training und Wissenstransfer; Anpassung oder Akklimatisation in Autotrophen; Kalzifizierung- Empfindlichkeiten von Phyla bis Ökosystemen	BMBF	Prof. Riebesell	01.09.2009 - 31.08.2012	391.032,00
50	BIOACID 03F0608A TP 0.4	Verbundprojekt BIOACID - Biologische Auswirkungen der Ozeanversauerung, Vorhaben: Training und Wissenstransfer	BMBF	Dr. Meyerhöfer	01.09.2009 - 31.08.2012	4.500,00
51	BIOACID 03F0608A TP 1.1.2	Verbundprojekt BIOACID - Biologische Auswirkungen der Ozeanversauerung, Vorhaben: Wechselwirkung zwischen Kohlenstoff- und Eisenverfügbarkeit und ihr Einfluss auf Photosynthese und Primärproduktion im Ozean	BMBF	Prof. LaRoche	01.09.2009 - 31.08.2012	78.741,00
52	BIOACID 03F0608A TP 1.1.3	BIOACID - Biologische Auswirkungen der Ozeanversauerung Vorhaben: Anpassung oder Akklimatisation in autotrophen Organismen	BMBF	Prof. Riebesell	01.09.2009 - 31.08.2012	210.184,00
53	BIOACID 03F0608A TP 1.1.4	BIOACID - Biologische Auswirkungen der Ozeanversauerung Vorhaben: Schnelle evolutive Anpassung wichtiger Phytoplanktonarten an einen Ozean mit hohem CO ₂ -Partialdruck.	BMBF	Prof. Riebesell	01.09.2009 - 31.08.2012	121.519,00
54	BIOACID 03F0608A TP 3.1.1	BIOACID - Biologische Auswirkungen der Ozeanversauerung Vorhaben: Anorganische Kohlenstoffaufnahme für Kalzifizierung und Photosynthese in Coccolithophoriden: Entwicklung einer einheitlichen Theorie	BMBF	Dr. Schulz, Kai	01.09.2009 - 31.12.2012	134.088,00
55	BIOACID 03F0608A TP 3.1.2	BIOACID - Biologische Auswirkungen der Ozeanversauerung Vorhaben: Transepitheliale Kalzifizierungsprozesse in der hermatypischen Kaltwasserkoralle (Scleractinia)	BMBF	Dr. Form	01.09.2009 - 31.08.2012	255.126,00

No.	Shorttitle/Framework	Research theme	Funding Agency	Lead PI	Funding period	Budget ¹
56	BIOACID 03F0608A TP 3.1.3	BIOACID - Biologische Auswirkungen der Ozeanversauerung Vorhaben: Effekte von Ozeanversauerung auf Kalzifizierung & Ionen - Homöostase im Stamm Mollusca	BMBF	Prof. Melzner	01.09.2009 - 31.12.2011	87.624,00
57	BIOACID 03F0608A TP 3.2.1	BIOACID - Biologische Auswirkungen der Ozeanversauerung Vorhaben: Einfluss der Versauerung und Erwärmung auf sub-polare schalenbildende Pteropoden	BMBF	Prof. Riebesell	01.09.2009 - 31.08.2012	170.248,00
58	BIOACID 03F0608A TP 3.2.4	BIOACID - Biologische Auswirkungen der Ozeanversauerung Vorhaben: Einfluss der Ozeanversauerung auf koralline Rotalgen	BMBF	Dr. Fietzke	01.09.2009 - 31.08.2012	122.844,00
59	BIOACID 03F0608A TP 3.3.2	BIOACID - Biologische Auswirkungen der Ozeanversauerung Vorhaben: Der Einfluss von sinkenden pH-Werten, Salinitäts- und Temperaturveränderungen auf die Spurenelementverteilung zwischen Meerwasser und kalzifizierenden Organismen	BMBF	Prof. Eisenhauer	01.09.2009 - 31.08.2012	115.785,00
60	BIOACID 03F0608A TP 5.2	BIOACID - Biologische Auswirkungen der Ozeanversauerung Vorhaben:	BMBF	Prof. Oschlies	01.09.2009 - 31.08.2012	276.772,00
61	SOPRAN II 03F0611A TP 1	Sopran II (Surface Ocean Processes in the Anthropocene)- Ozeanische Oberflächenprozesse im Anthropozän II; Vorhaben: Koordination; Austausch von Gasen u. org. Substanzen an der Grenzfläche Meer/Atmosphäre; Ökosystemwirkung des Staubeintrages; C-u. N-Dynami	BMBF	Prof. Wallace	01.02.2010 - 31.01.2013	895.799,00
62	SOPRAN II 03F0611A TP 10	SOPRAN II T 10: Quellen und Senken bromierter und jodierter Verbindungen im tropischen Ozean	BMBF	Prof. Wallace	01.02.2010 - 31.01.2013	394.302,00
63	SOPRAN II 03F0611A TP 11	SOPRAN II - Unterstützung des Internationalen Büros (International Project Office, IPO) von SOLAS	BMBF	Prof. Wallace	01.02.2010 - 31.01.2013	237.929,00
64	SOPRAN II 03F0611A TP 2	SOPRAN II TP 2: The contribution of physical processes to the emissions of trace gases in upwelling areas of the equatorial Atlantic Ocean: A N2O case study	BMBF	Dr. Bange	01.02.2010 - 31.01.2013	409.242,75
65	SOPRAN II 03F0611A TP 3	SOPRAN II TP3: Einfluss von Photochemie, atmosphärischen Aerosolen und gelösten organischen Stoffe auf biogeochemische Schlüsselprozesse bei den Kapverden.	BMBF	Dr. Croot	01.02.2010 - 31.01.2013	232.545,00
66	SOPRAN II 03F0611A TP 5	SOPRAN II TP 5: Air sea fluxes of CO2 and O2 in the equatorial and subtropical Atlantic: Observing variability on diel to interannual time scales	BMBF	Prof. Körtzinger	01.02.2010 - 31.01.2013	360.714,00
67	SOPRAN II 03F0611A TP 6	SOPRAN II TP 6: Ökosystemwirkungen des Staubeintrages (Eisen, Phosphor und Stickstoff) auf Phytoplanktonproduktivität Stickstofffixierung	BMBF	Prof. LaRoche	01.02.2010 - 31.01.2013	426.818,00

Appendices

No.	Shorttitle/Framework	Research theme	Funding Agency	Lead PI	Funding period	Budget ¹
68	SOPRAN II 03F0611A TP 7	SOPRAN II TP7: The influence of surface ocean processes on OVOCs and DMS in the atmosphere	BMBF	Dr. Marandino	01.02.2010 - 31.01.2013	161.481,00
69	SOPRAN II 03F0611A TP 8	SOPRAN II TP 8: A global model of the oceanic nitrous oxide and iodine cycles	BMBF	Prof. Oeschies	01.02.2010 - 31.01.2013	196.778,00
70	SOPRAN II 03F0611A TP 9	SOPRAN II TP 9: Impacts of ocean change on carbon and nitrogen dynamics during plankton bloom events	BMBF	Prof. Riebesell	01.02.2010 - 31.01.2013	633.667,00
71	SO 205 Mangan 03G0205C	SO 205: Erstellung von Zeitreihen an Manganknollen mittels radiogener (Sr, NS usw.) und nicht-traditionellen Isotopensystemen ($\delta^{88/86}\text{Sr}$, $\delta^{98/100}\text{Mo}$)	BMBF	Prof. Eisenhauer	01.02.2010 - 31.01.2013	37.295,00
72	SO 218 -SHIVA-Sonne 03G0218	SO218: SHIVA-Sonne: Stratosphärisches Ozon: Halogen Einfluss in einer sich verändernde Atmosphäre: (Expedition von FS Sonne und DLR Falcon im Südchinesischen Meer und der Sulu See)	BMBF	Dr. Quack	01.08.2011 - 31.03.2013	74.300,00
73	SUGAR A 03G0687A TP 4	Verbundprojekt: SUGAR-Submarine Gashydrat-Ressourcen; SUGAR-A: Submarine Gashydrat-Lagerstätten als Deponie für die CO ₂ -Sequestrierung; Vorhaben. Prospektion und Exploration von Gashydrat-Lagerstätten - Sonderprogramm GEOTECHNOLOGIEN	BMBF	Dr. Hensen	01.05.2008 - 30.06.2011	227.133,00
74	SO TransBromSonne 03G0731A	TransBromSonne - Emissionen kurzlebiger Bromverbindungen im tropischen Westpazifik, ihre Quellen und ihr Eintrag in die Stratosphäre	BMBF	Dr. Quack	01.07.2009 - 28.02.2011	55.671,00
75	SUGAR II 03G0819A A3	Verbundprojekt: SUGAR II A Methoden zur Exploration und Überwachung von Gashydrat-Lagerstätten - Sonderprogramm GEOTECHNOLOGIEN; Vorhaben: Charakterisierung von Gaslagerstätten und Überwachung des Erdgasförderprozesses	BMBF	Dr. Haeckel	01.07.2011 - 30.06.2014	288.129,70
76	SUGAR B 03SX250	Verbundprojekt: SUGAR-Submarine Gashydrat-Ressourcen; SUGAR B. Submarine Gashydrat-Lagerstätten - Erkundung, Abbau und Transport, Vorhaben: Numerische Simulation des Hydratabbaus und Erdgasgewinnung mittels CO ₂ -Substitution von Methan in Clathraten	BMBF	Dr. Haeckel	01.07.2008 - 30.06.2011	1.861.872,00
77	HISEM 03SX301	Entwicklung der Kalibrationsverfahren für den offshore Einsatz von HISEM	BMBF	Dr. Linke	01.10.2010 - 30.09.2013	126.704,00
78	SUGAR II-B 03SX320A	Verbundprojekt: SUGAR II-B-Submarine Gashydrat-Lagerstätten-Erdgasproduktion und CO ₂ Speicherung; Vorhaben: Strategien und Techniken zur Förderung von Erdgas aus Methanhydrat-Lagerstätten durch CO ₂ -Injektion	BMBF	Dr. Haeckel	01.08.2011 - 31.07.2014	1.577.900,00
79	PPP Taiwan 426/tai-PPP-cab	Projektbezogener Personenaustausch mit Taiwan	BMBF	Prof. Melzner	01.07.2010 - 31.12.2011	11.706,00

No.	Shorttitle/Framework	Research theme	Funding Agency	Lead PI	Funding period	Budget ¹
80	Intern. Zus. Canada CAN 11/Q02	Deutsch-Canadischer Workshop über Forschungszusammenarbeit im Nordatlantischen Ozean	BMBF	Prof. Wallace	01.02.2011 - 15.12.2011	9.095,00
81	Koop. Türkei TUR 08/I09	internationale Zusammenarbeit mit der Türkei Modelling phosphorus and nitrogen cycles at oxic-anoxic interfaces in the water column	BMBF	Prof. Oeschies	01.01.2009 - 31.12.2011	101.359,00
82	18122008 My Ocean	My Ocean - Development and pre-operational validation of upgraded GMES Marine Core Services and capabilities	EU	Prof. Oeschies	01.01.2009 - 31.03.2010	147.450,00
83	EPOCA 211384	EPOCA - European Project on Ocean Acidification	EU	Prof. Oeschies	01.05.2008 - 30.04.2012	160.395,20
84	EPOCA 211384	EPOCA - European Project on Ocean Acidification	EU	Prof. Riebesell	01.05.2008 - 30.04.2012	591.503,80
85	211816 EMSO	EMSO: European Multidisciplinary Seafloor Observation	EU	Dr. Pfannkuche	01.01.2009 - 31.03.2012	82.038,40
86	212196-COCOS	COCOS-Coordination Action Carbon Observation System	EU	Prof. Wallace	01.01.2009 - 30.04.2011	139.956,00
87	SHIVA 226224	Stratospheric Ozone: Halogen Impact in a Varying Atmosphere	EU	Prof. Körtzinger	01.07.2009 - 30.06.2012	261.333,50
88	MesoAqua 228224 TP1	Network of leading MESOCOSM facilities to advance the studies of future AQUATIC ecosystems from the Arctic to Mediterranean	EU	Prof. Riebesell	01.01.2009 - 31.12.2012	372.372,00
89	CarboChange 264879	Changes in carbon uptake and emissions by oceans in a changing climate	EU	Prof. Körtzinger	01.03.2011 - 28.02.2015	554.336,00
90	CarboChange 264879	Changes in carbon uptake and emissions by oceans in a changing climate	EU	Prof. Oeschies	01.03.2011 - 28.02.2015	337.920,00
91	ECO2 265847 CCT1	Sub-seabed CO2 Storage: Impact Ecosystems (ECO2) WP CCT1	EU	Dr. Linke	01.05.2011 - 30.04.2015	22.667,00
92	ECO2 265847 CCT2	Sub-seabed CO2 Storage: Impact Ecosystems (ECO2) WP CCT2	EU	Dr. Haeckel	01.05.2011 - 30.04.2015	19.734,00
93	ECO2 265847 WP 2	Sub-seabed CO2 Storage: Impact Ecosystems (ECO2) WP 2	EU	Dr. Haeckel	01.05.2011 - 30.04.2015	973.613,00
94	ECO2 265847 WP 3	Sub-seabed CO2 Storage: Impact Ecosystems (ECO2) WP	EU	Dr. Linke	01.05.2011 - 30.04.2015	239.120,00
95	ECO2 265847 WP 4	Sub-seabed CO2 Storage: Impact Ecosystems (ECO2) WP 4	EU	Prof. Melzner	01.05.2011 - 31.12.2011	20.800,00

Appendices

No.	Shorttitle/Framework	Research theme	Funding Agency	Lead PI	Funding period	Budget ¹
96	ECO2 265847 WP 7	Sub-seabed CO2 Storage: Impact Ecosystems (ECO2) WP 7	EU	Prof. Wallmann	01.05.2011 - 30.04.2015	516.595,00
97	ECO2 265847 WP 7M	Sub-seabed CO2 Storage: Impact Ecosystems (ECO2) WP 7 Management	EU	Dr. Reitz	01.05.2011 - 30.04.2015	640.392,00
98	OSS 2015 282723	OSS 2015 - Ocean Strategic Services beyond 2015	EU	Prof. Oeschles	01.11.2011 - 31.10.2014	435.723,00
99	Bones4Culture 61-2.5-10	Kulturerbe erhellt deutsch-dänische Identität	EU	Prof. Eisenhauer	01.07.2011 - 30.06.2014	37.040,00
100	ESONET (GOCE 036851)	European Seas Observatory Network	EU	Dr. Pfannkuche	01.03.2007 - 28.02.2011	13.168,00
101	HERMIONE	HERMIONE - Hotspot Ecosystem Research and Man`s Impact on European Seas	EU	Dr. Pfannkuche	01.04.2009 - 31.03.2012	297.760,00
102	HYPOX	HYPOX-In situ monitoring of oxygen depletion in hypoxic ecosystems of coastal and open seas and land-locked water bodies	EU	Dr. Pfannkuche	01.04.2009 - 31.03.2012	302.400,00
103	PIEF-GA-2009-236694 DAPOP	Deposition of Atmospheric Particles on the Ocean: a Process study -Support for trainign and career development of researchers (Marie Curie) Intra-European Fellowship-	EU	Dr. Croot	01.05.2009 - 30.04.2011	161.563,92
104	PITN-GA-2008-215157 CarlMarO	CalMaro -Ca lification by Marine Organism Networks for Initial Training (ITN) Marie Curie/SP3 People	EU	Prof. Eisenhauer	01.10.2008 - 30.09.2012	194.585,49
105	PITN-GA-2008-215157 CarlMarO	CalMaro -Ca lification by Marine Organism Networks for Initial Training (ITN) Marie Curie/SP3 People	EU	Prof. LaRoche	01.10.2008 - 30.09.2012	101.005,04
106	PITN-GA-2008-215157 CarlMarO	CalMaro -Ca lification by Marine Organism Networks for Initial Training (ITN) Marie Curie/SP3 People	EU	Prof. Riebesell	01.10.2008 - 30.09.2012	194.585,49
107	SUGAR II 03SX320A B	Verbundprojekt: SUGAR II-B-Submarine Gashydrat-Lagerstätten-Erdgasproduktion und CO2 Speicherung; Vorhaben: Strategien und Techniken zur Förderung von Erdgas aus Methanhydrat-Lagerstätten durch CO2-Injektion	Sonstige Energie-Pr.	Dr. Haeckel	01.08.2011 - 31.07.2014	450.000,00
108	SUGAR B	SUGAR B, Zuschuss von E.ON, REW, Stadtwerke Kiel	Sonstige Industrie	Prof. Wallmann	01.07.2008 - 30.06.2011	1.037.000,00
109	Stipendium , Victoria Bertics, USA	Forschungskostenzuschuss für 24 Monate für Stipendiatin V. Bertics	AvH	Prof. Treude	01.10.2010 - 30.09.2012	73.200,00
110	Stipendium Christa Marandino USA/1133906 STP	Forschungsstipendium Dr. Chrisa Marandino für weitere12 Monate	AvH	Prof. Wallace	01.11.2010 - 31.10.2011	36.600,00

No.	Shorttitle/Framework	Research theme	Funding Agency	Lead PI	Funding period	Budget ¹
111	Soft-Coral		Sonstige	Prof. Eisenhauer	01.02.2011 - 31.07.2011	15.900,00
112	Landereinsatz EXXONMOBIL	Landereinsatz EXXONMOBIL Nordsee	Sonstige	Dr. Linke	01.06.2011 - 31.05.2012	98.443,70
113	Ch4 Blow out	Contribute to, and to review and comment for DECC on the work programme and technique being developed by ExxonMobil for evaluating the emission of gas seabed at the location of the 22/4b-4 well and the total amount of methane reaching the atmosphere from	Sonstige	Dr. Linke	01.07.2011 - 30.06.2012	33.440,00
114	PaCO2 Eurofleets 1024-047	The Panarea Natural CO2 Seeps: Fate and Impact on the Leaking Gas	Sonstige	Dr. McGinnis	01.07.2011 - 31.12.2011	13.100,00
115	Mesokosmen Hawaii	Verbrauchsmaterial für Meskosmenexperiment auf Hawaii	Sonstige	Prof. Riebesell	01.07.2011 - 31.12.2011	27.000,00
116	JEDDAH TP 1	The Jeddah Transect - From coastal zone to deep rift basin: an integrated view of the geology, ecology, resources and biology of an infant ocean.	Sonstige	Dr. Schmidt	01.07.2010 - 30.06.2013	830.000,00
						29.607.906,99

¹ Total Budget over the complete funding period

Appendices

Research Division 3: Marine Ecology

No.	Shorttitle/Framework	Research theme	Funding Agency	Lead PI	Funding period	Budget ¹
1	ATLAS	Future Ocean Atlas, Proposal for development of a prototype and proof-of-concept Future Ocean Atlas, to be available on the Future Ocean Portal and on mobile devices	DFG	Dr. Froese	01.11.2011 - 31.05.2012	75.000,00
2	RECONN 3 CL 126/3-3	Resolving Trophodynamic Consequences of climate Change (RECONN 3)	DFG	Dr. Clemmesen-Bockelmann	01.12.2009 - 30.11.2011	62.740,00
3	Missing Baselines 2009/1 CLUSTER - CP0901	CLUSTER: Missing Baselines and Ecological Noise	DFG	Prof. Wahl	01.11.2009 - 30.06.2011	95.000,00
4	Global change on Labyrinth CLUSTER - 2009/1 CP0906	Effects of global change on Labyrinthula-infection in eelgrass <i>Zostera marina</i>	DFG	Dr. Bockelmann	01.11.2009 - 30.06.2011	95.000,00
5	Winners and losers in the CLUSTER - 2009/1 CP0931	Winners and losers in the Future Ocean	DFG	Dr. Froese	01.11.2009 - 30.06.2011	100.000,00
6	Fisheries-induced CLUSTER - CP1101	Local and global patterns in fisheries-induced evolution	DFG	Dr. Dierking	01.11.2011 - 30.10.2013	162.600,00
7	Tyrrhenische Meer IM 12/18-1	Mikrobiologie an Hydrothermalquellen des Tyrrhenischen Meeres	DFG	Prof. Imhoff	01.01.2011 - 30.09.2011	140.803,00
8	INIGIL JA 2008/1-1	Interactions between native and invasive gelatinous zooplankton within the Baltic Sea food web (INIGEL)	DFG	Dr. Javidpour	01.06.2010 - 30.05.2013	258.570,00
9	Mnemiopsis RE 1108/12-1	Evolutionsökologie der Mnemiopsis in Nord- und Ostsee Mnemiopsis Evolutionary Ecology	DFG	Prof. Reusch	01.03.2009 - 29.02.2012	140.450,00
10	Stickleback Host-Parasit RE 1108/13-1	Experimentelle Resistenz-Evolution und genetische Basis des Diplostomum-Stichling-Wirts-Parasitensystems -Stickleback Host-Parasit Coevolution	DFG	Prof. Reusch	01.08.2009 - 31.07.2012	220.070,00
11	Globale Erwärmung RE 1108/9-2	Globalerwärmung und Hitzestresstoleranz: Untersuchungen der genetischen und physiologischen Basis durch direktes Sequenzieren des Transkriptoms.	DFG	Prof. Reusch	01.01.2011 - 31.12.2011	18.000,00
12	Baltic Sea Plankton SO 145/23-3	Match and mismatch between phyto- and zooplankton during spring succession: an experimental analysis with Baltic Sea plankton	DFG	Prof. Sommer	01.03.2010 - 28.02.2011	89.230,00
13	Koordination Aquashift SO 145/24-3	Koordinierungsarbeiten im Schwerpunktprogramm "The impact of climate variability on aquatic ecosystems (AQUASHIFT)	DFG	Prof. Sommer	01.03.2010 - 28.02.2011	137.090,00

No.	Shorttitle/Framework	Research theme	Funding Agency	Lead PI	Funding period	Budget ¹
14	TRIAS SO 145/28-1	Developing triple (13C, 15N, 34S) stable isotope analysis as a tool in aquatic food web studies: seagrass meadows as model system (TRIAS)	DFG	Prof. Sommer	01.09.2010 - 31.08.2013	211.810,00
15	Bil. Koop. Russland SO 145/29-1	Initiierung und Intensivierung einer bilateralen Kooperation mit Russland Assessment of Mnemiopsis leidyi population dynamics in the context of ecosystem disturbance and climate change	DFG	Prof. Sommer	01.08.2010 - 30.04.2011	5.268,00
16	WA 708/21-1	Interface Ecology: How do macroalgae control the quantity and composition of the bacterial epibioses at their surfaces?	DFG	Prof. Wahl	01.11.2008 - 31.10.2011	123.046,00
17	GLOBAL CHANGE WE 4641/1-1	Global change and evolutionary genetics of pathogen resistance in estuarine ecosystems	DFG	Dr. Wegner	01.01.2010 - 31.12.2012	671.250,00
18	PATH WI 2726/2-1	Effects of plankton community structure on energy pathways and tropic efficiency (PATH)	DFG	Dr. Winder	01.04.2011 - 31.03.2014	203.340,00
19	TP B02	TP B02: Reaktionen der Planktongemeinschaft auf Änderungen der Nährstoffstöchiometrie	DFG-SFB754	Prof. Sommer	01.01.2008 - 31.12.2011	99.000,00
20	BIOACID 03F0608A TP 1.1.4	BIOACID - Biologische Auswirkungen der Ozeanversauerung Vorhaben: Schnelle evolutive Anpassung wichtiger Phytoplanktonarten an einen Ozean mit hohem Co2-Partialdruck	BMBF	Prof. Reusch	01.09.2009 - 31.08.2012	121.519,00
21	BIOACID 03F0608A TP 2.3.1	BIOACID - Biologische Auswirkungen der Ozeanversauerung Vorhaben: Auswirkungen auf Top-Prädatoren (Fische, Chephalopoden)	BMBF	Dr. Piatkowski	01.09.2009 - 31.08.2012	197.002,00
22	BIOACID 03F0608A TP 4.1.2	BIOACID - Biologische Auswirkungen der Ozeanversauerung Vorhaben: Versäuerungsstress: Ökologie früher Entwicklungsstadien in Zeiten des Globalen Wandels	BMBF	Prof. Wahl	01.09.2009 - 31.08.2012	114.390,00
23	Stip.- M. Moison A/10/73959	Stipendium Maud Solene Moison aus Frankreich für 4 Monate	BMBF	Dr. Molinero	01.02.2011 - 31.05.2011	4.125,00
24	Bilaterale Koop. China CHN 11/043	Biologische Kontrolle von Krankheitserregern in kommerziell genutzten Großanlagen	BMBF	Dr. Weinberger	01.07.2011 - 31.12.2013	12.160,00
25	PPP Argentinien ID50467312	PPP Argentinien: Effects of global warming on marine plankton	BMBF	Prof. Sommer	01.01.2010 - 31.12.2011	14.010,00
26	PPP Kroatien ID50477191	Jellyfish dynamics under disturbed and undisturbed ecosystems	BMBF	Dr. Molinero	01.01.2010 - 31.12.2011	14.000,00
27	PPP Griechenland ID50731771	Invasive species under contrasting marine environments	BMBF	Dr. Molinero	01.01.2010 - 31.12.2011	8.870,00

Appendices

No.	Shorttitle/Framework	Research theme	Funding Agency	Lead PI	Funding period	Budget ¹
28	PPP Mexiko ID51311210	PPP Mexiko: Synergies of Climate and Fishing on Exploited Marine Populations	BMBF	Dr. Molinero	01.01.2011 - 31.12.2012	9.837,00
29	Zusammenarbeit mit Indonesien IDN 10/007	Verknüpfte Netzwerke in der marinen Forschungsausbildung	BMBF	Prof. Wahl	01.04.2011 - 31.03.2012	1.498,00
30	Fucus-Wiederansiedlung	Fucus Wiederansiedlung	LLUR (LANU)	Prof. Wahl	01.09.2010 - 31.12.2011	49.000,00
31	Genetische Vielfalt	Bedeutung der genetischen Diversität. Im Rahmen des Projektes RADOST (Regionale Anpassungsstrategien für die deutsche Ostseeküste)	LLUR (LANU)	Prof. Wahl	01.04.2011 - 30.11.2012	19.000,00
32	Probenauswertung Nord- Ostsee	Auswertung von Proben der Nord- und Ostsee 2010+ 2011	LLUR (LANU)	Prof. Sommer	15.08.2011 - 30.11.2012	83.000,00
33	Nordseeschnäpel in der Treene 0608.41.11.14	Populationsgrößenabschätzung in der Treene durch die Bestimmung der Proportion von markierten Individuen in den Wiederfängen im Herbst 2013	LLUR (LANU)	Dr. Eizaguirre	01.12.2011 - 31.03.2013	49.995,00
34	Nordseeschnäpel in der Treene 0608.411012	Untersuchung der Taxonomie, Populationsbiologie und des Wanderverhaltens des Nordseeschnäpels in der Treene	LLUR (LANU)	Dr. Eizaguirre	01.11.2010 - 31.10.2011	51.600,00
35	Ostsee-Blüten 11-0675000-4121.3	Ostsee-Blüten: Aufbau einer Literatursammlung zum Themenkreis "klimatische, physiologische und sonstige Voraussetzungen zur Entwicklung von Makroalgenblüten/Dynamiken und Effekte von Makroalgenblüten"	LLUR (LANU)	Dr. Weinberger	01.11.2011 - 30.11.2012	67.000,00
36	Fucus-Auswilderung 11-0676000-4121.3	FUCUS-Auswilderung	LLUR (LANU)	Prof. Wahl	01.11.2011 - 30.11.2012	50.000,00
37	Dasya & Gracilaria 450924	Untersuchungen von Dasya & Gracilaria für das Landesamt für Landwirtschaft, Umwelt und ländliche Räume des Landes Schleswig-Holstein	LLUR (LANU)	Dr. Weinberger	01.09.2009 - 30.11.2011	90.000,00
38	Dasya & Gracilaria 450924.1	Untersuchungen von Dasya & Gracilaria für das Landesamt für Landwirtschaft, Umwelt und ländliche Räume des Landes Schleswig-Holstein	LLUR (LANU)	Dr. Weinberger	01.04.2011 - 30.11.2011	12.500,00
39	Sublitorales Seegras (Watt) 451014	Sublitorales Seegras (Watt) für das Landesamt für Landwirtschaft, Umwelt und ländliche Räume des Landes Schleswig-Holstein	LLUR (LANU)	Prof. Reusch	01.08.2010 - 30.11.2011	44.000,00
40	Seegras in der Lübecker Bucht 451022	Bedeutung von Seegraswiesen in der Lübecker Bucht	LLUR (LANU)	Prof. Reusch	01.10.2010 - 30.11.2011	59.800,00
41	Auswertung WRRM-Monitoring 201 451024	LLUR Auswertung Proben WRRM-Monitoring 2010	LLUR (LANU)	Prof. Sommer	15.10.2010 - 14.08.2011	53.600,00

No.	Shorttitle/Framework	Research theme	Funding Agency	Lead PI	Funding period	Budget ¹
42	Fucus Modell 451124	FUCUS-Modell	LLUR (LANU)	Prof. Wahl	01.07.2011 - 31.03.2012	21.300,00
43	LASH-Statistik 5451104	Analysen und Auwertung der LASH+ Platten	LLUR (LANU)	Prof. Wahl	01.04.2011 - 30.11.2011	23.500,00
44	Zoobenthos Kieler Bucht LLUR 125-0608.451018	Zoobenthos Kieler Bucht: Probennahme in der Kieler Bucht und deren Analyse nach Makrobenthos Verfahren	LLUR (LANU)	Dr. Rumohr, H.	01.08.2010 - 31.05.2011	3.000,00
45	Seegras & Labyrintha LLUR 451121	Seegras & Labyrintha	LLUR (LANU)	Prof. Reusch	01.07.2011 - 31.10.2013	60.000,00
46	Sterblichkeit von Aalen	Quantifizierung der fischereilichen, sonstigen anthropogen bedingten und natürlichen Sterblichkeit von Aalen im Einzugsgebiet der Schwentine (Schleswig-Holstein)	MLET	Prof. Hanel	01.09.2008 - 31.12.2011	328.168,62
47	BIOKATALYSE 2021-P24	Nachhaltige Biokatalyse auf neuen Wegen - BIODIVERSITY 2021: Isolierung, Charakterisierung und Produktion antimikrobieller (AMPs) mariner Organismen	MWV	Prof. Imhoff	01.07.2008 - 30.06.2011	450.000,00
48	Subito-Reinsubstanz-Bibliothek	Aufbau einer Reinsubstanz-Bibliothek mariner Naturstoffe im Zusammenhang mit dem Europäischen Screening Port in Hamburg	MWV	Prof. Imhoff	01.11.2008 - 31.12.2011	1.819.859,00
49	NEMO TP 1	"Nachhaltige Ernährung mit Marinen Organismen - NEMO" als Teilprojekt der Maßnahme "Aufbau des Nationalen Kompetenzzentrum Marikultur	MWV	Dr. Waller	01.01.2009 - 31.12.2012	382.354,00
50	NEMO TP 2	"Nachhaltige Ernährung mit Marinen Organismen - NEMO" (s.o.)	MWV	Dr. Ueberschär	01.01.2009 - 31.12.2012	165.593,00
51	NEMO TP 3	"Nachhaltige Ernährung mit Marinen Organismen - NEMO" (s.o.)	MWV	Prof. Sommer	01.01.2009 - 31.12.2012	166.297,00
52	NEMO TP 4	"Nachhaltige Ernährung mit Marinen Organismen - NEMO" (s.o.)	MWV	Dr. Ueberschär	01.01.2009 - 31.12.2012	213.837,00
53	NEMO TP 5	"Nachhaltige Ernährung mit Marinen Organismen - NEMO" (s.o.)	MWV	Prof. Hanel	01.01.2009 - 31.12.2012	153.126,00
54	NEMO TP 6	"Nachhaltige Ernährung mit Marinen Organismen - NEMO" (s.o.)	MWV	Dr. Waller	01.01.2009 - 31.12.2012	303.014,00
55	NEMO TP 7	"Nachhaltige Ernährung mit Marinen Organismen - NEMO" (s.o.)	MWV	Dr. Froese	01.01.2009 - 31.12.2012	89.411,00
56	Sushi-Detektive -Junge Forscher 2011	Förderwettbewerb "Stadt der jungen Forscher für die Durchführung des Projektes "Shushi-Detektive" in Zusammenarbeit mit der IGS Friedrichsort	Stadt Kiel	Prof. Reusch	01.02.2011 - 30.06.2011	3.220,00

Appendices

No.	Shorttitle/Framework	Research theme	Funding Agency	Lead PI	Funding period	Budget ¹
57	EPOCA 211384	EPOCA - Euroean Project on Ocean Acidification	EU	Dr. Clemmesen-Bockelmann	01.05.2008 - 30.04.2012	100.208,00
58	EPOCA 211384	EPOCA - Euroean Project on Ocean Acidification	EU	Prof. Sommer	01.05.2008 - 30.04.2012	100.208,00
59	MesoAqua 228224	Network of leading MESOcosm facilities to advance the studies of future AQUATic ecosystems from the Arctic to Mediterranean	EU	Prof. Sommer	01.01.2009 - 31.12.2012	244.900,00
60	Marine Fungi 265926	Natural products from marine fungi for the treatment of cancer	EU	Prof. Imhoff	01.05.2011 - 30.04.2014	612.376,00
61	4D4Life /238988	4D4Life:Distributed Dynamic Diversity Databases for Life INFRA-2008-1.2.2:Scientrific Data Infrastructure	EU	Dr. Froese	01.05.2009 - 30.04.2012	20.116,00
62	FP7-PEOPLE-2010-RG Trophic efficiency	Effects of plankton community structure on energy pathways and trophic efficiency Fellow: Dr. Monika Winder	EU	Prof. Sommer	01.03.2011 - 28.02.2015	100.000,00
63	MIRG-CT-2007-208801 IDA	IDA - Intraspecific Diversity and Adaptability of Fucus vesiculosus at range limits	EU	Prof. Wahl	01.10.2007 - 30.09.2011	100.000,00
64	PICOS 215056	PICOS - Privacy and Identity Management for Community Services	EU	Dr. Ueberschär	01.02.2008 - 30.06.2011	348.218,00
65	PIOF- GA-2008-221840 SeagrassTime	SeagrassTime: Trophic Cascaes in Marine Ecosystems Marie Curie Outgoing Fellowship, Britta Munkes, Australien	EU	Prof. Sommer	01.08.2008 - 31.07.2011	236.637,45
66	PITN-GA-2008-215157 CarlMarO	CalMaro -Ca lification by Marine Organism Networks for Initial Training (ITN) Marie Curie/SP3 People	EU	Dr. Clemmesen-Bockelmann	01.10.2008 - 30.09.2012	194.585,49
67	PITN-GA-2008-215157 CarlMarO	CalMaro -Ca lification by Marine Organism Networks for Initial Training (ITN) Marie Curie/SP3 People	EU	Prof. Wahl	01.10.2008 - 30.09.2012	194.585,49
68	SUBMARINER	Sustainable Uses of Baltic Marine Resources - SUBMARINER	EU	Prof. Imhoff	01.10.2010 - 31.12.2013	167.510,00
69	DOKMA Symposium	Interner und externer wissenschaftlicher Austausch, organisiert von Studenten und Doktoranden	Sonstige	Prof. Reusch	01.10.2011 - 31.12.2011	400,00
70	Leibniz X	Externe Managementunterstützung-Entwicklung und Erprobung von Instrumenten zur Erhöhung der Managementkompetenz in Ausgründungsvorhaben aus Einrichtungen der Leibniz-Gemeinschaft	Sonstige - Privat	Prof. Imhoff	01.09.2011 - 31.08.2012	88.165,00

No.	Shorttitle/Framework	Research theme	Funding Agency	Lead PI	Funding period	Budget ¹
71	Statussymposium 85 757	3. Statussymposium "Evolution at the sea" auf Sylt 7.-11.11.2011	Sonstige	Prof. Reusch	01.03.2011 - 31.12.2011	90.700,00
72	Drittmittelvertrag Springer Verlag	Beschäftigung einer Redaktionsassistentin für die Betreuung der Zeitschrift: Marine Biology (Herausgeber: Prof. Sommer)	Sonstige - Privat	Prof. Sommer	01.08.2007 - 31.12.2013	220.824,30
73	GAME III	Internationales Ausbildungs-und Forschungsprogramm GAME III	Sonstige	Dr. Lenz	01.10.2008 - 31.01.2011	56.000,00
74	H1205218999915473 Doppelkarrierepaare	Sachbeihilfe im Rahmen des Aktionsprogramms Doppelkarrierepaare	Sonstige	Dr. Bockelmann	01.02.2009 - 31.01.2012	44.815,00
75	Pipefish I/84 160	Evolutionary costs and benefits of trans-generational immune priming in a sexrole reversed fish	Sonstige	Prof. Reusch	01.05.2009 - 30.04.2012	241.500,00
76	Global Change I/84 763	The effect of global change on host-parasite interactions and coevolution of the deepsnouth pipefish (Syngnathus typhle) and its parasite (Cryptocotyle lingua)	Sonstige	S. Landis	01.04.2010 - 31.03.2013	190.300,00
77	MSRL, Unterauftrag	Methodische Grundlagen für sozio-ökonomische Analysen sowie Folgeabschätzungen von Maßnahmen einschl. Kosten-Nutzen-Analysen nach EG-Meeresschutzstrategie-Richtlinie (MSRL)	Sonstige - Privat	Dr. Hiebenthal	15.12.2010 - 30.04.2012	8.899,88
78	POPDYN	Population structure and dynamics of cod and sprat in the Baltic	Sonstige	Dr. Haslob	01.11.2011 - 31.12.2012	88.000,00
79	Stipendiat Hoang Xuan Ben	Kosten für den Aufenthalt Stipendiat Hoang Xuan Ben aus Vietnam	Sonstige	Prof. Wahl	01.12.2010 - 30.11.2013	10.000,00
80	JEDDAH TP 3.1	geology, ecology, resources and biology of an infant ocean. Ziel : die geologischen, ökologischen, biologischen Aspekte eines entstehenden Ozeans zu untersuchen.	Sonstige	Prof. Sommer	01.07.2010 - 30.06.2013	325.000,00
81	JEDDAH TP 6	The Jeddah Transect - From coastal zone to deep rift basin: an integrated view of the geology, ecology, resources and biology of an infant ocean. Ziel : die geologischen, ökologischen, biologischen Aspekte eines entstehenden Ozeans zu untersuchen.	Sonstige	Prof. Wahl	01.07.2010 - 30.06.2013	325.000,00
82	Unterstützung GAME	Mittel zur Unterstützung Studenten im Zusammenhang mit dem GAME Projekt	Sonstige	C. Gülden-zoph	01.02.2011 - 31.12.2011	47.000,00
						12.373.801,23

¹ Total Budget over the complete funding period

Appendices

Research Division 4: Dynamics of the Ocean Floor

No.	Shorttitle/Framework	Research theme	Funding Agency	Lead PI	Funding period	Budget ¹
1	MSM 17 Koordination	Koordination der Expedition 17/1-17/4 des F.S. Maria S.Merian	DFG	Prof. Behrmann	01.10.2010 - 31.05.2011	26.970,00
2	MSM 19 Koordination	MSM 19 Koordination	DFG	Dr. Werner	01.01.2011 - 31.12.2012	53.145,00
3	M86/2	M86 Fahrtabschnitt 2: Submarine hazard and their consequences in three selected areas off southern Italy 27.12.11-17.1.12 Carthagen(Spanien) - Brindisi (Italien)	DFG	Prof. Krastel	01.10.2011 - 30.09.2012	10.626,00
4	M86/3	M86/3: Adria lithosphere investigation	DFG	Prof. Kopp	01.10.2011 - 30.09.2012	55.406,00
5	M86/Koordination	M86 Koordination	DFG	Prof. Krastel	01.10.2011 - 30.09.2012	17.755,00
6	NEXT 2 BE 1041/28-2	Natural and experimental faulting of rocks, Nankai Accretionary Prism. Follow-up work to IODP Expeditions 315 and 316	DFG	Prof. Behrmann	01.05.2011 - 30.04.2013	84.180,00
7	SACOM BE 1041/29-1	Deformation and syn-rift magmatism at the South Atlantic passive continental margin, Walvis Ridge area. A marine wide angle seismic and magnetotelluric experiment	DFG	Prof. Behrmann	01.10.2010 - 30.06.2013	375.940,00
8	Datenmanagement-Pool CLUSTER	Datenmanagement-Pool	DFG	Dr. Weinrebe	01.11.2011 - 31.10.2012	5.000,00
9	Datenmanagement-Pool CLUSTER	Datenmanagement-Pool	DFG	Dr. Weinrebe	01.07.2009 - 31.10.2011	15.000,00
10	Model Macroalga CLUSTER - 2007/2	Submarine Hazards Junior Professor B4	DFG	Prof. Krastel	01.03.2008 - 30.10.2011	800.000,00
11	Tsunami risk CLUSTER - 2009/1 CP0912	Submarine landslides and associated tsunami risk: Combining observations and an integrated modeling approach	DFG	Prof. Krastel	01.11.2009 - 30.06.2011	51.000,00
12	Greenhouse Gases CLUSTER - CP1104	Quantifying the release of greenhouse gases during sill intrusion in sedimentary basins using numerical flow models	DFG	Dr. Iyer	01.11.2011 - 30.10.2013	127.600,00
13	Cape Verde Ashes FR 947/14-1	Quaternary explosive volcanism of the Cape Verde Archipelago: On- and offshore tephrostratigraphy	DFG	Dr. Freundt	01.09.2011 - 31.08.2014	166.800,00
14	TopoMed GR 1964/12-1	Plate re-organization in the western Mediterranean: lithospheric causes and topographic consequences (TopoMed) Eurocores Programm: Topo-Europe	DFG	Dr. Grevenmeyer	01.01.2009 - 31.12.2011	288.200,00

No.	Shorttitle/ Framework	Research theme	Funding Agency	Lead PI	Funding period	Budget ¹
15	TYRRHENIS GR 1964/13-1	TYRRHENIAN sea Seismic experiment on continental break-up and structure of conjugated rifted margins	DFG	Dr. Grevemeyer	01.03.2010 - 28.02.2013	231.980,00
16	TACOS GR 1964/14-1	Tectonic and Aftershocks of the Mw=8.8.2010 Chile earthquake rupture area from Ocean-bottom Seismometer data	DFG	Dr. Grevemeyer	01.05.2011 - 30.04.2014	165.150,00
17	QED GR 1964-15-1	The quest for the source area of the 1755 Lisbon earthquake - revealing the maximum depth of seismogenic faulting in the Horseshoe abyssal plain using constraints from a local marine seismic network	DFG	Dr. Grevemeyer	01.08.2011 - 31.07.2013	34.782,00
18	Shatsky Rise HO 1833/21-1	Shatsky Rise: Ar/Ar Geochronology and geochemistry of igneous rock samples from the Shatsky Rise Plateau (northwest Pacific Ocean)	DFG	Prof. Hoernle	01.09.2010 - 31.08.2012	178.550,00
19	WALVIS I HO 1883/17-2	WALVIS-I: Ar/Ar Geochronologie und Geochemie vorhandener Proben des Walvis und Rio Grande Rückens	DFG	Prof. Hoernle	01.10.2010 - 30.09.2013	112.100,00
20	CoCoCo JE 296/11-1	Incipient Continent-Continent Collision and its impact on basement and sedimentary cover. Der Einfluss einsetzender Kontinent-Kontinent Kollision auf Grundgebirge und Sedimentdecke	DFG	Dr. Jegen	01.11.2011 - 31.10.2014	23.282,00
21	ELCONA JE 296/8-1	Die land- und seeseitige tiefe elektrische Leihfähigkeitssruktur zur Untersuchung von magmatischen Ereignissen des Walvis Rückens und deren Ineraktion mit dem Kaoko Mobile Belt im nördlichen Namibia (ELCONA)	DFG	Dr. Jegen	01.10.2010 - 31.03.2013	16.500,00
22	ISOLDE JE 296/9-1	Elektromagnetische, gravimetrische und seismische Messungen zwecks Erforschung des Tristan da Cunha Hotspots und dessen Rolle in der Öffnung des Süd-Atlantiks	DFG	Dr. Jegen	01.11.2010 - 30.10.2013	104.250,00
23	DOKU-GAS KL 1846/3-1	Fluidaustritte an Schlammvulkanen und Cold Seeps sowie Fluidzirkulation des Don-Kuban Tiefseefächers (Kertsch Halbinsel, Krim, Schwarzes Meer)	DFG	Dr. Klauke	01.11.2011 - 31.12.2014	410.745,00
24	Rockall Trough KR 2222/14-1	Sediment transport processes in the Rockall Trough (North Atlantic) with special emphasis on submarine mass wasting	DFG	Prof. Krastel	01.09.2011 - 28.02.2012	22.600,00
25	Macedonia/Albania KR 2222/7-2	Bündel-Antrag Ohrid See: Sedimentary and neotectonic history of Lake Ohrid (Macedonia/Albania): aquisition and interpretation of new geophysical and geological data	DFG	Prof. Krastel	01.06.2010 - 30.05.2011	42.325,00
26	Andaman Sea, Thailand KR 2222/8-2	MASS-ANDAMAN - Morphodynamics and Slope Stability of the Andaman Sea Shelf (Thailand)	DFG	Dr. Krastel	01.08.2009 - 31.07.2011	180.100,00
27	Lake Van KR 2222/9-1	Mass-Andaman "Sedimentary processes in Lake Van, Turkey - correlation of high resolution seismic records with physicalproperties data	DFG	Prof. Krastel	01.02.2010 - 31.01.2012	188.900,00

Appendices

No.	Shorttitle/Framework	Research theme	Funding Agency	Lead PI	Funding period	Budget ¹
28	Nankai Trough KU 2685/1-1	Herkunftsanalyse und Ablagerungsprozesse von Tephren und tertiären vulkaniklastischen Sandsteinen der IODP Expedition 322, Nankai Trog	DFG	Dr. Kutterolf	01.10.2010 - 30.09.2012	30.950,00
29	TP A01	Darstellung von Tektonik, Fluidströmen und Hangstabilität durch multiskalige Kartiermethoden	DFG-SFB574	Prof. Behrmann	01.07.2008 - 30.06.2012	371.500,00
30	TP A05	TP A05: Serpentinisierung in Subduktionszonen	DFG-SFB574	Dr. Grevemeyer	01.07.2008 - 30.06.2012	340.900,00
31	TP A2	Wechselwirkungen und Transfer zwischen Ober- und Unterplatte	DFG-SFB574	Prof. Flüh / Rabbel	01.01.2001 - 30.06.2011	1.133.161,00
32	TP B05	TP: B05 - Diagenetische Prozesse in Forearc Sedimenten und der Volatileintrag in Subduktionszonen Systeme: Akkumulation, Transport und Freisetzung von Volatilen	DFG-SFB574	Dr. Hansteen	01.07.2008 - 30.06.2012	147.450,00
33	TP C04	TP C04 - Krustale Einflüsse auf das Volatilen-Inventar differenzierender Arc-Magmen und Konsequenzen für Vulkangefahren	DFG-SFB574	Dr. Freundt	01.07.2008 - 30.06.2012	431.600,00
34	TP C05	TP C05. Modellierung von Klimaeffekten/Rückkopplungen und Subduktionsprozessen	DFG-SFB574	Prof. Rüpke	01.07.2008 - 30.06.2012	126.870,00
35	TP Z01	TP Z01: Zentrale Aktivitäten und Logistik	DFG-SFB574	Prof. Hoernle	01.07.2008 - 30.06.2012	1.155.700,00
36	TP C02	TP C02: Zusammensetzung und Dynamik von Magmensystemen in Subduktionszonen: Magmenentstehung, zeitliche und räumliche Variationen	DFG-SFB574	Prof. Hoernle	01.07.2008 - 30.06.2012	430.100,00
37	BIOACID 03F0608A TP 3.2.4	BIOACID - Biologische Auswirkungen der Ozeanversauerung Vorhaben: Einfluss der Ozeanversauerung auf koralline Rotalgen	BMBF	Dr. Hansteen	01.09.2009 - 31.08.2012	68.418,00
38	SO 203 Woodlark 03G0203A	SO 203-WOODLARK- Magmengenese, Tektonik und Hydrothermalismus entlang der propagierenden Spreizungsachse im Woodlark Becken (SW-Pazifik)	BMBF	Prof. Devey	10.07.2009 - 31.12.2011	361.379,00
39	SO 208 PLUMEFLUX 03G0208A	SO 208 PLUMEFLUX: Ausbreitung von Galapagosplumematerial im äquatorialen Ostpazifik	BMBF	Prof. Hoernle	01.05.2010 - 31.08.2012	863.330,00
40	SO 209 Tektonik 03G0209B	SO 209 - Tektonik und Morpohologie des Kontinentalrandes vor Peru und Chile - bathymetrische Kartierungen während der biologischen Arbeiten.	BMBF	Prof. Flüh	01.07.2010 - 31.12.2011	17.965,00
41	SO 212-TACO 03G0212A	TACO- Tectonics and Aftershocks of the M8.8 2010 Chile earthquake monitored by Ocean-bottom-seismometers	BMBF	Prof. Flüh	01.07.2010 - 30.06.2011	85.441,00

No.	Shorttitle/Framework	Research theme	Funding Agency	Lead PI	Funding period	Budget ¹
42	NEMESYS 03G0214A	Variabilität von submarinen Gasaustritten in Struktur und Chemie und deren Klimarelevanz-Hikurangi Margin Neuseeland	BMBF	Dr. Bialas	01.01.2011 - 28.02.2013	425.614,00
43	KALMAR II 03G0672A TP3	KALMAR II TP 3 - Kurile Kamchatka an Aleuten Marginal Sea Island Arc Systems: Geodynamic and Climate Interaction in Space and Time	BMBF	Prof. Hoernle	01.01.2009 - 31.12.2011	165.652,00
44	SUGAR A 03G0687A TP Z	Verbundprojekt: SUGAR-Submarine Gashydrat-Ressourcen; SUGAR-A:Submarine Gashydrat-Lagerstätten als Deponie für die CO ₂ -Sequestrierung; Vorhaben. Prospektion und Exploration von Gashydrat-Lagerstätten - Sonderprogramm GEOTECHNOLOGIEN	BMBF	Dr. Bialas	01.05.2008 - 30.06.2011	174.255,00
45	SUGAR A 03G0687A TP 2.1	Verbundprojekt: SUGAR-Submarine Gashydrat-Ressourcen; s.o.	BMBF	Dr. Bialas	01.05.2008 - 30.06.2011	1.177.017,00
46	SUGAR A 03G0687A TP 2.2	Verbundprojekt: SUGAR-Submarine Gashydrat-Ressourcen; s.o.	BMBF	Dr. Jegen	01.05.2008 - 30.06.2011	167.191,00
47	SUGAR A 03G0687A TP A1.1	Verbundprojekt: SUGAR-Submarine Gashydrat-Ressourcen; s.o.	BMBF	Dr. Weinrebe	01.05.2008 - 30.06.2011	356.423,00
48	SUGAR II 03G0819A A1-2	Verbundprojekt: SUGAR-Submarine Gashydrat-Ressourcen; s.o. Vorhaben: Charakterisierung von Gaslagerstätten und Überwachung des Erdgasförderprozesses	BMBF	Dr. Bialas	01.07.2011 - 30.06.2014	222.198,80
49	SUGAR II 03G0819A A2-2	Verbundprojekt: SUGAR-Submarine Gashydrat-Ressourcen; s.o.Vorhaben: Charakterisierung von Gaslagerstätten und Überwachung des Erdgasförderprozesses	BMBF	Dr. Bialas	01.07.2011 - 30.06.2014	387.563,70
50	SUGAR II 03G0819A A2-5	Verbundprojekt: SUGAR-Submarine Gashydrat-Ressourcen; s.o. Vorhaben: Charakterisierung von Gaslagerstätten und Überwachung des Erdgasförderprozesses	BMBF	Dr. Jegen	01.07.2011 - 30.06.2014	379.108,80
51	TEWS 03TSU01	Tsunami-Frühwarnsystem zur Finanzierung von Ocean-Bottom-Units	BMBF	Prof. Flüh	01.04.2005 - 31.03.2011	4.548.883,53
52	POWTEX 05K10MG1	F&E-Vertrag zum BMBF geförderten Vorhaben: Verbundprojekt POWTEX: Teilprojekt 2:Entwicklung und Konstruktion von geowissenschaftlichen Probenumgebungen für das Hochintensitätsdiffraktometer POWTEX HIER: Entw. von Deformationsapparaturen für das Neutronend	BMBF	Dr. Stipp	15.05.2011 - 31.12.2012	37.000,00
53	Koop.Brasilien BRA 10/J23	Deutsch-Brasilianische Initiative zur kooperierenden Forschung von Gashydraten und CO ₂ Speicherung	BMBF	Dr. Bialas	01.07.2010 - 31.08.2011	7.416,00
54	Intern. Zus. Neuseeland NZL 11/010	Intern. Zusammenarbeit mit Neuseeland: Forschungsk Kooperation zur Untersuchung großer Pockmarks und möglicher Gasautritte am Chatham Rise mit moderner Multibeamtechnik und WCI	BMBF	Dr. Bialas	01.07.2011 - 28.02.2013	21.778,00

Appendices

No.	Shorttitle/Framework	Research theme	Funding Agency	Lead PI	Funding period	Budget ¹
55	ECO2 265847 WP 1	Sub-seabed CO2 Storage: Impact Ecosystems (ECO2) WP 1	EU	Prof. Berndt	01.05.2011 - 30.04.2015	183.000,00
56	FP7-PEOPLE-2010-IEF SEISSEA	Seismic Inversion and Stochastic Spectral Analysis of Thermohaline Staircases in the Tyrrhenian Sea Fellow: Dr. Grant George Buffett	EU	Dr. Kläschen	15.09.2011 - 14.09.2013	170.363,20
57	Aufenthalt J. Gill	Alexander von Humboldt Preis für Prof. James B. Gill	AvH	Prof. Hoernle	01.08.2011 - 30.11.2011	20.000,00
58	TIGER	Promotionsstipendium Alexey Shulgin: Tiefenstruktur der Sumatra-Subduktionszone: Geophysikalische Analyse der seismischen Rupturzonen von 2004/2005	Sonstige	Prof. Kopp	01.07.2010 - 31.03.2011	9.900,00
59	FUGRO	Joint Inversion of CSEM, MT & Reflection Seismic Entwicklung von Konzepten, Algorithmen und Programmen zur Joint Inversion von geophysikalischen Daten	Sonstige - Privat	Dr. Jegen	01.07.2011 - 30.06.2012	80.000,00
60	INDEX 2011 /4500067607	Vorbereitung des Einsatzes und Betriebes des BGR-eigenen Seitensichtsonarsystems C3D Benthos	Sonstige - Privat	Dr. Weinrebe	01.11.2011 - 31.03.2012	54.327,00
61	Luftpulser Anlage SO 215	Ausleihe Luftpulser Anlage und Ozeanbodenseismometer für die SO 215 Ausfahrt	Sonstige	Prof. Füh	23.04.2011 - 13.06.2011	139.150,00
62	OBS-Ersatz	Versicherung für verlorengegangene OBS	Sonstige	Prof. Flüh	01.04.2011 - 31.12.2011	32.500,00
63	PETROBAR-IPY	Ausleihe Ocean Bottom Seismometer in der Barents See, Norwegen	Sonstige	Prof. Flüh	01.04.2010 -	80.000,00
64	SINDRI II	3D Joint inversion of FTG, MT and seismic data in the south eastern Faroe-Shetland basin	Sonstige	Dr. Jegen	01.08.2010 - 31.07.2012	165.797,00
65	JEDDAH TP 2	The Jeddah Transect - From coastal zone to deep rift basin: an integrated view of the geology, ecology, resources and biology of an infant ocean.	Sonstige	Prof. Devey	01.07.2010 - 30.06.2013	745.000,00
						19.103.788,03

¹ Total Budget over the complete funding period

Central Facilities

No.	Shorttitle/Framework	Research theme	Funding Agency	Lead PI	Funding period	Budget ¹
1	Costa Rica Mud BR 1075/11-1	Costa Rica Mud Mounds Site Survey Site survey data evaluation IODP Proposal 633	DFG	Dr. Brückmann	01.01.2010 - 31.12.2011	4.500,00
2	CLUSTER - OH Allgemein	CLUSTER Overhead Allgemein	DFG	Prof. Herzig	01.01.2007 - 31.10.2011	906.750,00
3	DFG Programm-Pauschale	DFG Programmpauschale für Sachbeihilfen 20 %	DFG	Prof. Herzig	01.01.2008 -	463.439,00
4	Lake Van (Turkey) Schm 250/87-1	Zusatzbewilligung zu: Impact of long-term explosive volcanism from Nemrut and Süphan volcanoes on the compositional, temporal, dynamic and paleoclimatic evolution of Lake Van (Turkey)	DFG	Prof. Schmincke	01.02.2011 - 31.03.2013	14.015,00
5	Lake Van (Turkey) Schm 250/87-1	Impact of long-term explosive volcanism from Nemrut and Süphan volcanoes on the compositional, temporal, dynamic and paleoclimatic evolution of Lake Van (Turkey)	DFG	Prof. Schmincke	01.04.2010 - 31.03.2012	185.370,00
6	MAAR Vulkane Schm 250/88-1	Externe vs. Interne Forcing Mechanismen bei der Entstehung von Maar Vulkanen	DFG	Prof. Schmincke	01.06.2011 - 31.05.2012	13.754,00
7	Masterstudiengang China CHN 05/Q18	Durchführung eines gemeinsamen Masterstudienganges Meereswissenschaften unter Beteiligung der Univ. Kiel und Bremen in Deutschland und der Ocean University of China, Qingdao	BMBF	Prof. Herzig	01.01.2010 - 30.09.2011	259.905,00
8	HGF-CV-Station 03F0649A	HGF-Ozean-Observatorium und Meeresforschungsstation auf den Kapverdischen Inseln	BMBF	Prof. Körtzinger	01.12.2011 - 30.06.2012	883.819,00
9	ROVADAPT 03G0823A	ROVADAPT: Anpassung, Erprobung und wissenschaftlicher Einsatz deutscher Tieftauchroboter auf britischen Forschungsschiffen	BMBF	Dr. Abegg	01.10.2011 - 31.12.2011	731.728,00
10	JIBA -Energieprojekt	Integration of FTG and reflecton seismic data in exissting joint inversin algorithm tomography, gravity and MT data	IPP	Dr. Jegen	01.01.2008 - 31.01.2011	741.900,00
11	Geohazard Turkmenistan	Joint German-Turkmen Project, Monitoring Geohazard such as the Activity of Mud Volcanoes at the Eastern Margin of the Caspian Sea, Turkmenistan	Sonstige Energie-Pr.	Dr. Brückmann	01.10.2011 - 30.09.2014	1.146.000,00
12	Azerbaijan Transition Zone	New Methodologies for the Assessment of Hydrocarbon Potential in a high-risk area-"Transition Zone", Offshore Azerbaijan	Sonstige Energie-Pr.	Dr. Schmidt	15.12.2011 - 31.12.2012	234.200,00
13	JAGO	Einnahmen aus Vercharterung JAGO	JAGO	Dr. Hissmann	01.07.2006 - 31.12.2049	198.000,00
14	Gastforscheraufenthalt	Förderung im Rahmen der Exzellenz-Initiative der Prof. Dr. Werner Petersen-Stiftung von renomierten Wissenschaftlern	Sonstige	Prof. Herzig	01.01.2011 - 31.12.2011	60.000,00

Appendices

No.	Shorttitle/Framework	Research theme	Funding Agency	Lead PI	Funding period	Budget ¹
15	MANAFA	ATLANTIS II exploration support for DFI-MANAFA	Sonstige - Privat	Dr. Brückmann	01.12.2010 - 30.11.2011	102.576,00
16	KIWIZ-Ausstellung	Ausstellung über das KIWIZ auf den Münchner Wissenschaftstagen	Sonstige	Dr. Hoffmann-Wieck	01.10.2011 - 31.12.2011	3.500,00
17	Schülerprojekt 50158	Schüler entwickeln Ausstellungsmodule zum Thema Ozean und Flachmeer/Atlantik und Ostsee	Sonstige	Dr. Hoffmann-Wieck	01.02.2011 - 30.06.2011	5.419,00
18	Allgem. Forschungstätigkeiten	Unterstützung Wissenschaftler	Sonstige	Prof. Herzig	01.01.2006 - 31.12.2049	12.000,00
19	private Vercharterung AUV	Vercharterung AUV / Privat	Sonstige - Privat	Dr. Lackschewitz	01.01.2010 -	514.039,94
20	JEDDAH TP 5	The Jeddah Transect - From coastal zone to deep rift basin: an integrated view of the geology, ecology, resources and biology of an infant ocean. Ziel: die geologischen, ökologischen, biologischen Aspekte eines entstehenden Ozeans zu untersuchen.	Sonstige	Dr. Brückmann	01.01.2011 - 30.06.2013	1.408.541,67
21	JEDDAH TP 6	The Jeddah Transect - From coastal zone to deep rift basin: an integrated view of the geology, ecology, resources and biology of an infant ocean. Ziel: die geologischen, ökologischen, biologischen Aspekte eines entstehenden Ozeans zu untersuchen.	Sonstige	Dr. Brückmann	01.01.2011 - 30.06.2013	288.310,01
22	Vercharterung AUV	Vercharterung AUV	Sonstige	Dr. Lackschewitz	01.01.2010 -	431.514,01
						8.609.280,63

¹ Total Budget over the complete funding period

4. Ship Statistics & Expeditions

Table 4.1: Partners on IFM-GEOMAR research vessels, 2007-2011

Pool partners are the AWI, the University of Hamburg and the IOW; national partners are all other public research institutes; barter cruises within the 'Tripartite Agreement' (NERC, IFREMER, NIOZ, CSIC, IMR), with the FWG, and on "LITTORINA" within the technical agreement with 3L-ELAC (since 2003). Student courses of Kiel University, CAU; days for mobilisation and demobilisation included in total ship days; maintenance and shipyard separately

Ship	User	Days				
		2007	2008	2009	2010	2011
"POSEIDON"	IFM-GEOMAR	68	35	123	110	69
	Kiel University	0	11	0	0	0
	Pool partners	122	104	97	36	131
	National partners	0	59	0	77	0
	Barter cruises	11	0	0	0	0
	Charter days at sea	20	19	0	0	45
	Student courses CAU	0	10	0	0	0
	Transfer cruises	36	31	15	30	31
	Mob/demob	35	34	37	43	32
	Total ship days	292	305	272	297	308
	Maintenance	56	54	80	51	49
	Days off	17	9	13	3	8
"ALKOR"	IFM-GEOMAR	95	152	123	100	108
	Kiel University	0	0	2	14	0
	Pool partners	56	64	112	64	81
	National partners	0	10	0	11	0
	Barter cruises	0	0	0	0	0
	Charter days at sea	48	23	0	0	3
	Student courses CAU	36	20	6	10	37
	Transfer cruises	4	2	5	2	7
	Mob/demob	33	40	52	29	40
	Total ship days	269	311	300	230	276
	Maintenance	59	36	50	125	57
	Days off	34	19	15	10	32

Ship	User	Days				
		2007	2008	2009	2010	2011
"LITTORINA"	IFM-GEOMAR	23	91	61	53	54
	Kiel University	63	57	98	58	76
	Pool partners	0	0	4	3	0
	National partners	0	0	0	5	3
	Barter cruises	8	9	14	0	6
	Charter days	0	0	0	0	0
	Student courses CAU	14	34	15	42	34
	Mob/demob	9	22	44	3	22
	Total ship days	117	213	236	164	194
	Maintenance	37	38	18	49	41
	Days off	211	115	111	125	130
"POLARFUCHS"	IFM-GEOMAR	182	156	163	116	149
	Kiel University	15	12	28	18	9
	Pool partners	4	0	0	0	0
	National partners	5	9	0	5	3
	Barter cruises	0	3	2	0	2
	Charter days	0	0	0	0	0
	Student courses CAU	5	5	5	0	0
	Total ship days	211	185	198	139	163
	Maintenance	22	63	21	31	32
	Days off	132	118	146	132	170

Appendices

Table 4.2: Major expeditions 2011

Ship	Date	Region	Project	PI
POSEIDON	13.01. - 31.01.2011	Atlantis II Tief	JEDDAH	C. Devey
POSEIDON	03.02. - 20.02.2011	Atlantis II Tief	JEDDAH	M. Schmidt
POSEIDON	23.02. - 03.03.2011	Zentrales u. nördl. Rotes Meer	JEDDAH	U. Sommer
SONNE	09.03. - 22.04.2011	„Hikkurangi Margin“ östl. Neuseeland	NEMESYS	J. Bialas
MERIAN	10.03. - 12.04.2011	NW-Afrika	SFB 754	Pfannkuche
ALUCIA with AUV ABYSS	18.03. - 23.04.2011	Äquatorialer Atlantik	Suche nach AF447	M. Purcell (WHOI)
GARCIA DEL CID with JAGO	31.03. - 14.04.2011	Meerenge zw. Mallorca u. Menorca	EU-Projekt LIFE INDEMARES	J.-M. Gili (CMIMA-CSIC)
ALKOR	08.04. - 21.04.2011	Ostsee	AQUASHIFT, EPOCA	T. Reusch
METEOR	05.04. - 28.04.2011	Mittelmeer	MED-REPEAT	T. Tanuha
POSEIDON	19.04. - 07.05.2011	Tyrrhenisches Meer		S. Petersen
MERIAN	11.05. - 19.06.2011	Äquatorialer Atlantik	BMBF NORDATLANTIK, SOPRAN, SFB 754	P. Brandt
MERIAN	22.06. - 21.07.2011	Äquatorialer Atlantik	BMBF NORDATLANTIK, SOPRAN, SFB 754	A. Körtzinger
METEOR	31.05. - 21.06.2011	Biscaya	TransBiscay	S. Flögel
POLARSTERN with ROV Kiel 6000	13.07. - 03.08.2011	Framstraße		M. Klages (AWI)
METEOR	05.08. - 25.08.2011	Nordatlantik	BMBF NORDATLANTIK, THOR, EUROSITES	J. Karstensen, D. Quadfasel
POSEIDON	10.08. - 02.09.2011	Westlich Spitzbergen	EU-FP7 HERMIONE, ExCel Clust. Future Ocean	O. Pfannkuche
POSEIDON with JAGO	05.09. - 30.09.2011	Schelf westl. Norwegen	BIOACID	U. Riebesell
James Cook with ROV Kiel 6000	07.11. - 21.12.2011	Südwestl. Indik		J. Copley (NOC)

Ship	Date	Region	Project	PI
MERIAN	02.12. - 22.12.2011	Südatlantik	AGULHAS-Rückenprojekt	R. Werner

Table 4.3: Days used by IFM-GEOMAR (chief scientists) on Global Ocean Research Vessels

A total of 29 cruise days on MERIAN were cancelled due to technical until 2008; they are partly replaced by charter days on ATALANTE in 2007 (1 leg, 30 days) and in 2008 (3 legs, 71 days).

Research Vessel	Ship days used by IFM-GEOMAR					
	2006	2007	2008	2009	2010	2011
POLARSTERN	0	24	32	76	74	0
METEOR	96	33	39	173	118	76
SONNE	51	140	93	99	114	44
MERIAN plan / conducted	80/80	104/32	80 / 51	0	81	122
Barter Ships	0	40	60	0	0	13
Charter Ships plan / conducted	0	0 / 30	0 / 71	0	12	0
Sum	227	341 / 299	304 / 346	348	399	255

5. Publications

5.1 Books (Authorship)

Allison, I., Bindoff, N. L., Bindshadler, R. A., Cox, P. M., de Noblet, N., England, M. H., Francis, J. E., Gruber, N., Haywood, A. M., Karoly, D. J., Kaser, G., Le Quere, C., Lenton, T. M., Mann, M. E., McNeil, B. I., Pitman, A. J., Rahmstorf, S., Rignot, E., Schellnhuber, H. J., Schneider, S. H., Sherwood, S. C., Somerville, R. C. J., Steffen, K., Steig, E. J., **Visbeck, M.** and Weaver, A. J., 2011: The Copenhagen Diagnosis: Updating the World on the Latest Climate Science. Elsevier, Oxford, UK.

5.2 Books (Editorship)

-

5.3 Book contributions

Barta, A., **Bumke, K.**, Horvath, A., Horvath, G., **Kalisch, J.**, Kanitz, T., Kleta, H., Macke, A. and **Zoll, Y.**, 2011: Autonomous measurement platforms for energy and material exchange between ocean and atmosphere (OCEANET), atmosphere component. In: Berichte zur Polar- und Meeresforschung (Reports on Polar and Marine Research). Alfred Wegener Institut für Polar- und Meeresforschung, Bremerhaven, Germany, 10-22.

Blume, B., and **Körtzinger, A.**, 2011: Chemische Ozeanographie. In: Dietrich, V., Erb, R., and Kleesattel, W. (Eds.): *Abenteuer Weltmeere*. Cornelsen Verlag, Berlin, 30-39, ISBN 978-3-06-010825-1.

Bröckel, K. von, 2011: Das Bombenattentat in Djibouti, Ostafrika, am 18. März 1987. In: Jakobi, N., von Neuhoff, H. and Springer, B. (Eds.): 25 Jahre Meteor, Hauschild, Bremen, 139-141, ISBN 978-3-89757-507-3.

Bröckel, K. von and **Lackschewitz, K.**, 2011: Die Entwicklung der Forschungsschiffahrt am Beispiel des „grauen“, „weißen“ und „blauen“ FS METEOR. In: Jakobi, N., von Neuhoff, H. and Springer, B. (Eds.): 25 Jahre Meteor, Hauschild, Bremen, 155-166, ISBN 978-3-89757-507-3.

Burwicz, E., **Rüpke, L.** and **Wallmann, K.**, 2011: A new global gas hydrate budget based on numerical reaction-transport modeling and a novel parameterization of Holocene and Quaternary sedimentation. In: Proceedings of the 7th International Conference on Gas Hydrates (ICGH 2011), Edinburgh, Scotland, United Kingdom, July 17-21, 2011. HWU, Edinburgh, 9.

Douglass, A., Fioletov, V., Godin-Beekmann, S., Müller, R., Stolarski, R. S., Webb, A., Arola, A., Burkholder, J. B., Burrows, J. P., Chipperfield, M. P., Cordero, R., David, C., den Outer, P. N., Diaz, S. B., Flynn, L. E., Hegglin, M., Herman, J. R., Huck, P., Janjai, S., Janosi, I. M., Kryscin, J. W., Liu, Y., Logan, J., Matthes, K., McKenzie, R. L., Muthama, N. J., Petropavlovskikh, I., Pitts, M., Ramachandran, S., Rex, M., Salawitch, R. J., Sinnhuber, B. M., Staehelin, J., Strahan, S., Tourpali, K., Valverde-Canossa, J., Vigouroux, C., Bodeker, G. E., Canty, T., De Backer, H., Demoulin, P., Feister, U., Frith, S. M., Groß, J. U., Hase, F., Klyft, J., Koide, T., Kurylo, M. J., Loyola, D., McLinden, C. A., Megretskaja, I. A., Nair, P. J., Palm, M., Panastasiou, D., Poole, L. R., Schneider, M., Schofield, R., Slaper, H., Steinbrecht, W., **Tegtmeier, S.**, Terao, Y., Tilmes, S., Vyushin, D. I., Weber, M. and Yang, E. S., 2011: Stratospheric Ozone and Surface Ultraviolet Radiation. In: Scientific Assessment of Ozone Depletion: 2010, Chapter 2. World Meteorological Organization, Geneva, Switzerland, 1-80.

Gattuso, J. P., Beijma, J., Gehlen, M., **Riebesell, U.**, and Tuley, C., 2011: Effects of Ocean Acidifi-

cation on Pelagic Organisms and Ecosystems. In: *Ocean Acidification*. Oxford University Press, Oxford, UK, 291-311.

Haeckel, M. and **Suess, E.**, 2011: Natürliche Gashydrate - Künftige Energieträger oder Option zur CO₂-Speicherung? . In: Chemie über den Wolken ... und darunter. Wiley-VCH, Weinheim, 65-70. ISBN 978-3-527-32651-8

Kopp, H., 2011: The Java convergent margin: structure, seismogenesis and subduction processes. In: The SE Asian Gateway: History and Tectonics of the Australia-Asia Collision. Special Publication / Geological Society of London, 355. Geological Society Publishing House, London, 111-137. ISBN 978-1-86239-329-5

Montzka, S., Reimann, S., O'Doherty, S., Engel, A., **Krüger, K.** and Sturges, W. T., 2011: Ozone-Depleting Substances (ODSs) and Related Chemicals. In: Scientific Assessment of Ozone Depletion: 2010, Chapter 1. World Meteorological Organization, Geneva, Switzerland, 1-112.

Pecher, I. A., **Bialas, J.** and **Flueh, E. R.**, 2011: Ocean bottom seismics. In: Encyclopedia of Solid Earth Geophysics, Vol. 1-2. Encyclopedia of Earth Science Series. Springer, Heidelberg [u.a.], 901-918. ISBN 978-90-481-8701-0

Riebesell, U., and **Schulz, K.**, 2011: Auswirkungen der Ozeanversauerung auf marine Lebensprozesse. In: *Warnsignal Klima: Die Meere - Änderungen und Risiken*. Buchreihe „Warnsignale“. Wissenschaftliche Auswertungen, Hamburg, 172-176.

Riebesell, U., and Tortell, P. D., 2011: Effects of Ocean Acidification on Pelagic Organisms and Ecosystems. In: *Ocean Acidification*. Oxford University Press, Oxford, UK, 99-121.

Rüpke, L., **Biaostoch, A.**, **Treude, T.**, **Riebesell, U.**, **Roth, C.**, **Burwicz, E.**, **Park, W.**, **Latif, M.**,

Böning, C. W., Wallmann, K. and Madec, G., 2011: Rising Arctic Ocean temperatures cause gas hydrate destabilization and ocean acidification. In: Proceedings of the 7th International Conference on Gas Hydrates (ICGH2011), Edinburgh, Scotland, United Kingdom, July 17-21, 2011. HWU, Edinburgh, p. 6.

Schulz, K., and Riebesell, U., 2011: Versauerung des Meerwassers durch anthropogenes CO₂. In: *Warnsignal Klima: Die Meere – Änderungen und Risiken*. Buchreihe „Warnsignale“. Wissenschaftliche Auswertungen, Hamburg, 159-162.

Thiede, J., **Spielhagen, R., Bauch, H.** and Piepenburg, D., 2011: Frühwarnsysteme für globale Umweltveränderungen und ihre historische Dokumentation in natürlichen Klimaarchiven. In: Forschungsvorhaben im Akademienprogramm / Akademie der Wissenschaften und Literatur, Mainz. ADW, Mainz, 58-59.

Treude, T., 2011: Biogeochemical reactions in marine sediments underlying anoxic water bodies, In: Altenbach, A., Bernhard, J., and Seckbach, J. (Eds.): *Anoxia: Paleontological Strategies and Evidence for Eukaryote Survival*. Cellular Origins, Life in Extreme Habitats and Astrobiology (COLE) Book Series, Springer, 19-38.

Treude, T., 2011: Methanhydrate: Erwärmung, Freisetzung und mikrobiologischer Abbau. In: *Warnsignal Klima: Die Meere – Änderungen und Risiken*. Wissenschaftliche Auswertungen, Hamburg, 178-182. ISBN 978-3-9809668-5-6.

Voß, M., Baker, A., **Bange, H.**, Conley, D., Deutsch, B., **Engel, A.**, Heiskanen, A. S., Jickells, T., Lancelot, C., McQuatters-Gollop, A., Middelburg, J., Schiedek, D., and Slomp, C., 2011: Nitrogen processes in coastal and marine ecosystems. In: *The European Nitrogen Assessment: Sources, Effects and Policy Perspectives*. Cambridge University Press, New York, USA, 147-176, ISBN 978-1-107-00612-6.

Wallmann, K., 2011: Advantageous exchange of

gas: methane hydrate of gas. In: Researching: energy. Fraunhofer-Gesellschaft, München, 7.

Wallmann, K., Haeckel, M., Bohrmann, G. and **Suess, E.**, 2011: Zukünftige kommerzielle Nutzung von Methanhydratvorkommen im Meeresboden. In: *Warnsignal Klima: Die Meere – Änderungen & Risiken*. Wissenschaftliche Auswertungen, Hamburg, 285-288, ISBN 978-3-9809668-5-6.

5.4 Peer-reviewed Articles

Aggarwal, R. K., Allainguillaume, J., Bajay, M. M., Barthwal, S., Bertolino, P., Chauhan, P., Consuegra, S., Croxford, A., Dalton, D. L., Den Belder, E., Díaz-Ferguson, E., Douglas, M. R., Drees, M., Elderson, J., Esselink, G. D., Fernández-Manjarrés, J. F., Frascaria-Lacoste, N., Gäbler-Schwarz, S., De Leaniz, C. G., Ginwal, H. S., Goodisman, M. A. D., Guo, B., Hamilton, M. B., Hayes, P. K., Hong, Y., Kajita, T., Kalinowski, S. T., Keller, L., Koop, B. F., Kotzé, A., Lalremruata, A., Leese, F., Li, C., Liew, W. Y., Martinelli, S., Matthews, E. A., Medlin, L. K., Messmer, A. M., Meyer, E. I., Monteiro, M., Moyer, G. R., John Nelson, R., Nguyen, T. T. T., Omoto, C., Ono, J., Pavinato, V. A. C., Percy, M., Pinheiro, J. B., Power, L. D., Rawat, A., **Reusch, T. B. H.**, Sanderson, D., Sannier, J., Sathe, S., Sheridan, C. K., Smulders, M. J. M., Sukganah, A., Takayama, K., Tamura, M., Tateishi, Y., Vanhaecke, D., Vu, N. V., Wickneswari, R., Williams, A. S., Wimp, G. M., Witte, V. And Zucchi, M. I., 2011: Permanent Genetic Resources added to Molecular Ecology Resources Database 1 August 2010 - 30 September 2010. *Molecular Ecology Resources*, **11** (1), 219-222, DOI 10.1111/j.1755-0998.2010.02944.x.

Alemayehu, T., Leis, A., **Eisenhauer, A.** and Dietzel, M., 2011: Multi-proxy approach (²H/¹H, ¹⁸O/¹⁶O, ¹³C/¹²C and ⁸⁷Sr/⁸⁶Sr) for the evolution of carbonate-rich groundwater in basalt dominated aquifer of Axum area, northern Ethiopia. *Chemie der Erde - Geochemistry*, **71** (2), 177-187, DOI

10.1016/j.chemer.2011.02.007.

Álvarez, M., **Tanhua, T.**, Brix, H., Lo Monaco, C., Metzl, N., McDonagh, E. L. and Bryden, H. L., 2011: Decadal biogeochemical changes in the subtropical Indian Ocean associated with Subantarctic Mode Water. *Journal of Geophysical Research*, **116** (C9), C09016, DOI 10.1029/2010JC006475.

Anneville, O., Berthon, V., Glippa, O., Mahjoub, M. S., **Molinero, J. C.** and Souissi, S., 2011: Ontogenetic dietary changes of whitefish larvae: insights from field and experimental observations. *Environmental Biology of Fishes*, **91** (1), 27-38, DOI 10.1007/s10641-010-9755-1.

Abmann, S., Frank, C. and **Körtzinger, A.**, 2011: Spectrophotometric high-precision seawater pH determination for use in underway measuring systems. *Ocean Science*, **7** (5), 597-607, DOI 10.5194/os-7-597-2011.

Baars, O. and **Croot, P.**, 2011: Comparison of Alternate Reactants for pM Level Cobalt Analysis in Seawater by the Use of Catalytic Voltammetry. *Electroanalysis*, **23** (7), 1663-1670, DOI 10.1002/elan.201100003.

Baars, O. and **Croot, P.**, 2011: The speciation of dissolved zinc in the Atlantic sector of the Southern Ocean. *Deep-Sea Research Part II-Topical Studies in Oceanography*, **58** (25-26), 2720-2732, DOI 10.1016/j.dsr2.2011.02.003.

Bach, L., Riebesell, U. and **Schulz, K.**, 2011: Distinguishing between the effects of ocean acidification and ocean carbonation in the coccolithophore *Emiliania huxleyi*. *Limnology and Oceanography*, **56** (6), 2040-2050, DOI 10.4319/lo.2011.56.6.2040.

Bader, J. and **Latif, M.**, 2011: The 1983 drought in the West Sahel: a case study. *Climate Dynamics*, **36** (3-4), 463-472, DOI 10.1007/s00382-009-0700-y.

Bader, J., Mesquita, M. D. S., Hodges, K. I., **Keenlyside, N. S.**, Østerhus, S. and Miles, M., 2011: A review on Northern Hemisphere sea-ice,

storminess and the North Atlantic Oscillation: Observations and projected changes. *Atmospheric Research*, **101** (4), 809-834, DOI 10.1016/j.atmosres.2011.04.007.

Bahr, A., Nürnberg, D., Schönfeld, J. and Garbe-Schönberg, D., 2011: Hydrological variability in Florida Straits during Marine Isotope Stage 5 cold events. *Paleoceanography*, **26** (2), PA2214, DOI 10.1029/2010PA002015.

Baldanza, A., Bizzarri, R. and **Hepach, H.**, 2011: New biostratigraphic data from the Early Pleistocene tyrrhenian PALEOCOAST (Western Umbria, Central Italy). *Geologia Croatica*, **64** (2), 133-142, DOI 10.4154/gc.2011.11.

Bangs, N. L. B., Hornbach, M. J. and **Berndt, C.**, 2011: The mechanics of intermittent methane venting at South Hydrate Ridge inferred from 4D seismic surveying. *Earth and Planetary Science Letters*, **310** (1-2), 105-112, DOI 10.1016/j.epsl.2011.06.022.

Barker, A.K., Troll, V.R., Ellam, R.M., **Hansteen, T.H.**, Harris, C., Stillman, C.J., Andersson, A., 2011: Magmatic evolution of the Cadamosto Seamount, Cape Verde: beyond the spatial extent of EM1. *Contrib Mineral Petrol*, DOI 10.1007/s00410-011-0708-2

Bauch, D., Gröger, M., **Dmitrenko, I.**, Hölemann, J., Kirillov, S., Mackensen, A., Taldenkova, E. and Andersen, N., 2011: Atmospheric controlled freshwater release at the Laptev Sea Continental margin. *Polar Research*, **30**, 5858-5871, DOI 10.3402/polar.v30i0.5858.

Bauch, D., Hölemann, J., Andersen, N., Dobrotina, E., **Nikulina, A.** and **Kassens, H.**, 2011: The Arctic shelf regions as a source of freshwater and brine-enriched waters as revealed from stable oxygen isotopes. *Polarforschung*, **80** (3), 127-140, DOI10013/epic.38389.d001 .

Bauch, D., Rutgers van der Loeff, M., Andersen, N., Torres-Valdes, S., Bakker, K. and Abrahamsen, E. P., 2011: Origin of freshwater and polynya wa-

ter in the Arctic Ocean halocline in summer 2007. *Progress in Oceanography*, **91**, 482-495, DOI 10.1016/j.pocean.2011.07.017.

Bauch, H. A., Kandiano, E., Helmke, J., Andersen, N., Rosell-Mele, A. and Erlenkeuser, H., 2011: Climatic bisection of the last interglacial warm period in the Polar North Atlantic. *Quaternary Science Reviews*, **30** (15-16), 1813-1818, DOI 10.1016/j.quascirev.2011.05.012.

Bauch, T., Reijmer, J., McNeill, D. F. and Schäfer, P., 2011: Development of a Pliocene mixed-carbonate siliciclastic reef (Limon, Costa Rica). *Sedimentary Geology*, **239** (1/2), 37-47, DOI 10.1016/j.sedgeo.2011.05.001.

Beal, L. M., De Ruijter, W. P. M., **Biaostoch, A.**, Zahn, R., Cronin, M., Hermes, J., Lutjeharms, J., Quartly, G., Tozuka, T., Baker-Yeboah, S., Bornman, T., Cipollini, P., Dijkstra, H., Hall, I., **Park, W.**, Peeters, F., Penven, P., Ridderinkhof, H. and **Zinke, J.**, 2011: On the role of the Agulhas system in ocean circulation and climate. *Nature*, **472** (7344), 429-436, DOI 10.1038/nature09983.

Bengtsson, L., Hodges, K. I., Koumoutsaris, S., Zahn, M. and **Keenlyside, N. S.**, 2011: The changing atmospheric water cycle in Polar Regions in a warmer climate. *Tellus A*, **63** (5), 907-920, DOI 10.1111/j.1600-0870.2011.00534.x.

Berenos, C., Schmid-Hempel, P. and **Wegner, M.**, 2011: Experimental coevolution leads to a decrease in parasite-induced host mortality. *Journal of Evolutionary Biology*, **24** (8), 1777-1782, DOI 10.1111/j.1420-9101.2011.02306.x.

Berenos, C., **Wegner, M.** and Schmid-Hempel, P., 2011: Antagonistic coevolution with parasites maintains host genetic diversity: an experimental test. *Proceedings of the Royal Society B-Biological Sciences*, **278** (1703), 218-224, DOI 10.1098/rspb.2010.1211.

Bergmann, N., Fricke, B., **Schmidt, M.**, Tams, V., **Beining, K.**, Schwitte, H., Boettcher, A. A., Martin, D. L., **Bockelmann, A.**, **Reusch, T. B.**

H. and Rauch, G., 2011: A quantitative real-time polymerase chain reaction assay for the sea-grass pathogen *Labyrinthula zosterae*. *Molecular Ecology Resources*, **11** (6), 1076-1081, DOI 10.1111/j.1755-0998.2011.03051.x.

Bertram, C., **Krätschell, A.**, O'Brien, K., **Brückmann, W.**, Proelss, A. and Rehdanz, K., 2011: Metalliferous sediments in the Atlantis II Deep—Assessing the geological and economic resource potential and legal constraints. *Resources Policy*, **36** (4), 315-329, DOI 10.1016/j.resourpol.2011.09.001.

Biaostoch, A., Treude, T., Rüpke, L. H., Riebesell, U., Roth, C., Burwicz, E. B., Park, W., Latif, M., Böning, C. W., Madec, G. and **Wallmann, K.**, 2011: Rising Arctic Ocean temperatures cause gas hydrate destabilization and ocean acidification. *Geophysical Research Letters*, **38** (8), L08602, DOI 10.1029/2011GL047222.

Bluhm, K., Croot, P., Huhn, O., Rohardt, G. and Lochte, K., 2011: Distribution of iodide and iodate in the Atlantic sector of the southern ocean during austral summer. *Deep-Sea Research Part II-Topical Studies in Oceanography*, **58** (25-26), 2733-2748, DOI 10.1016/j.dsr2.2011.02.002.

Bockelmann, A., Wels, T. and Bakker, J. P., 2011: Seed origin determines the range expansion of the clonal grass *Elymus athericus*. *Basic and Applied Ecology*, **12** (6), 496-504.

Bohlen, L., Dale, A., Sommer, S., Mosch, T., Hensen, C., Noffke, A., Scholz, F. and **Wallmann, K.**, 2011: Benthic Nitrogen Cycling Traversing the Peruvian Oxygen Minimum Zone. *Geochimica et Cosmochimica Acta*, **75** (20), 6094-6111, DOI 10.1016/j.gca.2011.08.010.

Borchard, C., Borges, A., Händel, N. and **Engel, A.**, 2011: Biogeochemical response of *Emiliania huxleyi* (PML B92/11) to elevated CO₂ and temperature under phosphorous limitation: a chemostat study. *Journal of Experimental Marine Biology and Ecology*, **410**, 61-71,

- Botz, R., **Schmidt, M.**, Kus, J., Ostertag-Henning, C., Ehrhardt, A., **Olgun, N.**, Garbe-Schönberg, D. and Scholten, J., 2011: Carbonate recrystallisation and organic matter maturation in heat-affected sediments from the Shaban Deep, Red Sea. *Chemical Geology*, **280** (1-2), 126-143, DOI 10.1016/j.chemgeo.2010.11.003.
- Brandt, P.**, Caniaux, G., Bourlès, B., Lazar, A., **Dengler, M.**, **Funk, A.**, **Hormann, V.**, Giordani, H. and Marin, F., 2011: Equatorial upper-ocean dynamics and their interaction with the West African monsoon. *Atmospheric Science Letters*, **12**, 24-30, DOI 10.1002/asl.287.
- Brandt, P.**, **Funk, A.**, **Hormann, V.**, **Dengler, M.**, **Greatbatch, R. J.** and Toole, J. M., 2011: Interannual atmospheric variability forced by the deep equatorial Atlantic Ocean. *Nature*, **473** (7348), 497-500, DOI 10.1038/nature10013.
- Brötz, E., Kulik, A., Vikineswary, S., Lim, C. T., Tan, G. Y. A., **Zinecker, H.**, **Imhoff, J. F.**, Paululat, T. and Fiedler, H. P., 2011: Phenelfamycins G and H, new elfamycin-type antibiotics produced by *Streptomyces albospinus* Acta 3619. *The Journal of Antibiotics*, **64** (3), 257-266, DOI 10.1038/ja.2010.170.
- Burkhard, B., **Opitz, S.**, Lenhart, H., Ahrendt, K., Garthe, S., Mendel, B. and Windhorst, W., 2011: Ecosystem based modeling and indication of ecological integrity in the German North Sea - Case study offshore wind parks. *Ecological Indicators*, **11** (1), 168-174, DOI 10.1016/j.ecolind.2009.07.004.
- Burwicz, E. B.**, **Rüpke, L.** and **Wallmann, K.**, 2011: Estimation of the global amount of submarine gas hydrates formed via microbial methane formation based on numerical reaction-transport modeling and a novel parameterization of Holocene sedimentation. *Geochimica et Cosmochimica Acta*, **75** (16), 4562-4576, DOI 10.1016/j.gca.2011.05.029.
- Butchart, N., Charlton-Perez, A. J., Cionni, I., Hardiman, S. C., Haynes, P. and **Krüger, K.**, 2011: Multi-model climate and variability of the stratosphere. *Journal of Geophysical Research - Atmospheres*, **116**, D05102, DOI 10.1029/2010JD014995.
- Böttger-Schnack, R.**, 2011: Taxonomic re-examination and distribution of copepods reported as *Oncaea notopus* Giesbrecht, 1891 (*Copepoda*, *Oncaeidae*) in the Mediterranean Sea. *Marine Biodiversity*, **41**, 325-341, DOI 10.1007/s12526-010-0072-x.
- Böttger-Schnack, R.** and Machida, R. J., 2011: Comparison of morphological and molecular traits for species identification and taxonomic grouping of oncaeid copepods. *Hydrobiologia*, **666** (1), 111-125, DOI 10.1007/s10750-010-0094-1.
- Büdenbender, J.**, **Riebesell, U.** and **Form, A.**, 2011: Calcification of the Arctic coralline red algae Lithothamnion glaciale in response to elevated CO₂. *Marine Ecology Progress Series*, **441**, 79-87, DOI 10.3354/meps09405.
- Cahyarini, S. Y., Pfeiffer, M., **Dullo, W. C.**, Zinke, J., **Hetzinger, S.**, Kasper, S., Grove, C. and Garbe-Schönberg, D., 2011: Comment on "A snapshot of climate variability at Tahiti at 9.5 ka using a fossil coral from IODP Expedition 310" by Kristine L. DeLong, Terrence M. Quinn, Chuan-Chou Shen, and Ke Lin. *Geochemistry Geophysics Geosystems*, **12** (3), Q03012, DOI 10.1029/2010GC003377.
- Carpenter, L. J., Fleming, Z. L., Read, K. A., Lee, J. D., Moller, S. J., Hopkins, J., Purvis, R., Lewis, A. C., Müller, K., Heinold, B., Herrmann, H., Wadinga Fomba, K., van Pinxteren, D., Müller, C., Tegen, I., Wiedensohler, A., Müller, T., Niedermeier, N., Achterberg, E. P., Patey, M. D., Kozlova, E. A., Heilmann, M., Heard, D. E., Plane, J. M. C., Mahajan, A., Oetjen, H., Ingham, T., Stone, D., Whalley, L., Evans, M., Pilling, M. J., Leigh, R. J., Monk, P. S., Karunaharan, A., Vaughan, S., Arnold, S. R., Tschirter, J., Pöhler, D., Frieß, U., Holla, R., Mendes, M. L., Lopez, H., Faria, B., Manning, A. J., and **Wallace, D. W. R.**, 2011: Seasonal characteristics of tropical marine boundary layer air measured at the Cape Verde Atmospheric Observatory. *Journal of Atmospheric Chemistry*, **67**, 2, 87-140.
- Carracedo, J. C., Fernandez-Turiel, J. L., Gimeno, D., Guillou, H., Klügel, A., **Krastel, S.**, Paris, R., Perez-Torrado, F. J., Rodriguez-Badiola, E., Rodriguez-Gonzalez, A., Troll, V. R., Walter, T. R. and Wiesmaier, S., 2011: Comment on "The distribution of basaltic volcanism on Tenerife, Canary Islands: Implications on the origin and dynamics of the rift systems" by A. Geyer and J. Martí. *Tectonophysics* **483** (2010) 310-326. *Tectonophysics*, **503** (3-4), 239-241, DOI 10.1016/j.tecto.2010.10.015.
- Chabert, A., Minshall, T. A., Westbrook, G. K., **Berndt, C.**, Thatcher, K. and Sarkar, S., 2011: Characterization of a stratigraphically constrained gas hydrate system along the western continental margin of Svalbard from ocean bottom seismometer data. *Journal of Geophysical Research - Solid Earth*, **116**, B12102, DOI 10.1029/2011JB008211.
- Champion, A. J., Hodges, K. I., Bengtsson, L. O., **Keenlyside, N. S.** and Esch, M., 2011: Impact of increasing resolution and a warmer climate on extreme weather from Northern Hemisphere extratropical cyclones. *Tellus A*, **63** (5), 893-906, DOI 10.1111/j.1600-0870.2011.00538.x.
- Chan, P., Halfar, J., Williams, B., **Hetzinger, S.**, Steneck, R., Zack, T. and Jacob, D. E., 2011: Freshening of the Alaska Coastal Current recorded by coralline algal Ba/Ca ratios. *Journal of Geophysical Research - Biogeosciences*, **116** (G1), G01032, DOI 10.1029/2010JG001548.
- Chen, T.**, Ling, H. F., **Frank, M.**, Zhao, K. D. and Jiang, S. Y., 2011: Zircon effect alone insufficient to generate seawater Nd-Hf isotope relationships. *Geochemistry Geophysics Geosystems*, **12** (5), Q05003, DOI 10.1029/2010GC003363.

Chistyakov, K. V., Ganyushkin, D. A., Moskalenko, I. G. and **Dullo, W. C.**, 2011: The Glacier Complexes of the Mountain Massifs of the North-West of Inner Asia and their Dynamics. *Geography, Environment, Sustainability*, **4** (2),

Contreras-Reyes, E., Grevemeyer, I., Watts, A. B., **Flueh, E. R.**, Peirce, C., **Moeller, S.** and **Pa-penberg, C.**, 2011: Deep seismic structure of the Tonga subduction zone: Implications for mantle hydration, tectonic erosion, and arc magmatism. *Journal of Geophysical Research - Solid Earth*, **116** (B10), B10103, DOI 10.1029/2011JB008434.

Cramer, B. D., Munnecke, A., Schofield, D. I., Haase, K. M. and **Haase-Schramm, A.**, 2011: A Revised $^{87}\text{Sr}/^{86}\text{Sr}$ Curve for the Silurian: Implications for Global Ocean Chemistry and the Silurian Timescale. *Journal of Geology*, **119** (4), 335-349, DOI 10.1086/660117.

Croot, P., 2011: Rapid Determination of Picomolar Titanium in Seawater with Catalytic Cathodic Stripping Voltammetry. *Analytical Chemistry*, **83** (16), 6395-6400, DOI 10.1021/ac201450k.

Croot, P., Baars, O. and **Streu, P.**, 2011: The distribution of dissolved zinc in the Atlantic sector of the Southern Ocean. *Deep-Sea Research Part II-Topical Studies in Oceanography*, **58** (25-26), 2707-2719, DOI 10.1016/j.dsr2.2010.10.041.

Crutchley, G. J., Berndt, C., Klaeschen, D. and Masson, D. G., 2011: Insights into active deformation in the Gulf of Cadiz from new 3-D seismic and high-resolution bathymetry data. *Geochemistry, Geophysics, Geosystems*, **12** (7), Q07016, DOI 10.1029/2011GC003576.

Crutchley, G., Gorman, A. R., Pecher, I. A., Toulmin, S. and Henrys, S. A., 2011: Geological controls on focused fluid flow through the gas hydrate stability zone on the southern Hikurangi Margin of New Zealand, evidenced from multi-channel seismic data. *Marine and Petroleum Geology*, **28** (10), 1915-1931, DOI 10.1016/j.marpetgeo.2010.12.005.

Cukur, D., Horozal, S., Kim, D. C. and Han, H. C., 2011: Seismic stratigraphy and structural analysis of the northern East China Sea Shelf Basin interpreted from multi-channel seismic reflection data and cross-section restoration. *Marine and Petroleum Geology*, **28** (5), 1003-1022, DOI 10.1016/j.marpetgeo.2011.01.002.

Cukur, D., Horozal, S., Lee, G. H., Kim, D. C., Han, H. C. and Kang, M. H., 2011: Structural evolution of the northern East China Sea shelf basin interpreted from cross-section restoration. *Marine Geophysical Researches*, **32** (3), 363-381, DOI 10.1007/s11001-011-9114-4.

Czeschel, R., Stramma, L., Schwarzkopf, F., Giese, B. S., **Funk, A.** and **Karstensen, J.**, 2011: Middepth circulation of the eastern tropical South Pacific and its link to the oxygen minimum zone. *Journal of Geophysical Research - Oceans*, **116**, C01015, DOI:10.1029/2010JC006565

Dale, A., Sommer, S., Bohlen, L., Treude, T., Bertics, V. J., Bange, H., Pfannkuche, O., Schorp, T., Mattsdotter, M. E. K. and Wallmann, K., 2011: Rates and regulation of nitrogen cycling in seasonally hypoxic sediments during winter (Boknis Eck, SW Baltic Sea): Sensitivity to environmental variables. *Estuarine, Coastal and Shelf Science*, **95**, 14-28, DOI 10.1016/j.ecss.2011.05.016.

Dammshäuser, A., Wagener, T. and Croot, P., 2011: Surface water dissolved aluminum and titanium: Tracers for specific time scales of dust deposition to the Atlantic?. *Geophysical Research Letters*, **38**, L24601, DOI 10.1029/2011GL049847.

Dannowski, A., Grevemeyer, I., Phipps Morgan, J., Ranero, C. R., Maia, M. and **Klein, G.**, 2011: Crustal structure of the propagating TAMMAR ridge segment on the Mid-Atlantic Ridge, 21.5°N. *Geochemistry Geophysics Geosystems*, **12**, Q07012, DOI 10.1029/2011gc003534.

Dekov, V., Boycheva, T., Hålenius, U., **Petersen, S.**, Billström, K., Stummeyer, J., Kamenov,

G. and Shanks, W., 2011: Atacamite and paratacamite from the ultramafic-hosted Logatchev seafloor vent field (14°45'N, Mid-Atlantic Ridge). *Chemical Geology*, **286**, 169-184, DOI 10.1016/j.chemgeo.2011.05.002.

Dinc-Akdogan, N., Rabbal, W., **Flueh, E. R.** and Taylor, W., 2011: Mantle wedge hydration in Nicaragua from Local Earthquake Tomography. *Geophysical Journal International*, **186** (1), 92-112, DOI 10.1111/j.1365-246X.2011.05041.x.

Dirksen, O., **van den Bogaard, C.**, Danhara, T. and Diekmann, B., 2011: Tephrochronological investigation at Dvuh-yurtochnoe lake area, Kamchatka: Numerous landslides and lake tsunami, and their environmental impacts. *Quaternary International*, **246** (1-2), 298-311, DOI 10.1016/j.quaint.2011.08.032.

Dmitrenko, I. A., Ivanov, V. V., Kirillov, S. A., Vinogradova, E. L., Torres-Valdes, S. and **Bauch, D.**, 2011: Properties of the Atlantic derived halocline waters over the Laptev Sea continental margin: Evidence from 2002 to 2009. *Journal of Geophysical Research-Oceans*, **116** (C10), C10024, DOI 10.1029/2011JC007269.

Dmitrenko, I. A., Kirillov, S. A., Tremblay, L. B., **Kassens, H.**, Anisimov, O. A., Lavrov, S. A., Razumov, S. O. and Grigoriev, M. N., 2011: Recent changes in shelf hydrography in the Siberian Arctic: Potential for subsea permafrost instability. *Journal of Geophysical Research-Oceans*, **116** (C10), C10027, DOI 10.1029/2011JC007218.

Doan, M. L., Conin, M., Henry, P., Wiersberg, T., Boutt, D., Buchs, D., Saffer, D., McNeill, L. C., Cukur, D. and Lin, W., 2011: Quantification of free gas in the Kumano fore-arc basin detected from borehole physical properties: IODP NanTroSEIZE drilling Site C0009. *Geochemistry Geophysics Geosystems*, **12**, Q0AD06, DOI 10.1029/2010GC003284.

Domingues, R. B., Anselmo, T. P., Barbosa, A. B., **Sommer, U.** and Galvão, H. M., 2011: Light as a

driver of phytoplankton growth and production in the freshwater tidal zone of a turbid estuary. *Estuarine, Coastal and Shelf Science*, **91** (4), 526-535, DOI 10.1016/j.ecss.2010.12.008.

Domingues, R. B., Anselmo, T. P., Barbosa, A. B., **Sommer, U.** and Galvão, H. M., 2011: Nutrient limitation of phytoplankton growth in the freshwater tidal zone of a turbid, Mediterranean estuary. *Estuarine, Coastal and Shelf Science*, **91** (2), 282-297, DOI 10.1016/j.ecss.2010.10.033.

Domingues, R. B., Barbosa, A. B., **Sommer, U.** and Galvão, H. M., 2011: Ammonium, nitrate and phytoplankton interactions in a freshwater tidal estuarine zone: potential effects of cultural eutrophication. *Aquatic Sciences*, **73** (3), 331-343, DOI 10.1007/s00027-011-0180-0.

Dommenget, D., 2011: An objective analysis of the observed spatial structure of the tropical Indian Ocean SST variability. *Climate Dynamics*, **36** (11-12), 2129-2145, DOI 10.1007/s00382-010-0787-1.

Dommenget, D. and **Flöter, J.**, 2011: Conceptual understanding of climate change with a globally resolved energy balance model. *Climate Dynamics*, **37** (11-12), 2143-2165, DOI 10.1007/s00382-011-1026-0.

Duteil, O. and **Oschlies, A.**, 2011: Sensitivity of simulated extent and future evolution of marine suboxia to mixing intensity. *Geophysical Research Letters*, **38** (6), L06607, DOI 10.1029/2011GL046877.

Dzierma, Y., Rabbal, W., Thorwart, M. M., **Flueh, E. R.**, Mora, M. M. and Alvarado, G. A., 2011: The steeply subducting edge of the Cocos Ridge: evidence from receiver functions beneath the northern Talamanca Range, south-central Costa Rica. *Geochemistry Geophysics Geosystems*, **12** (4), Q04S30, DOI 10.1029/2010GC003477.

Egert, M., Schmidt, I., Höhne, H. M., **Lachnit, T.**, Schmitz, R. A. and Breves, R., 2011: rRNA-based profiling of bacteria in the axilla of healthy males

suggests right-left asymmetry in bacterial activity. *FEMS Microbiology Ecology*, **77** (1), 146-153, DOI 10.1111/j.1574-6941.2011.01097.x.

Ehlert, C., **Frank, M.**, **Haley, B. A.**, Böniger, U., De Deckker, P. and Gingele, F. X., 2011: Current transport versus continental inputs in the eastern Indian Ocean: Radiogenic isotope signatures of clay size sediments. *Geochemistry Geophysics Geosystems*, **12** (6), Q06017, DOI 10.1029/2011GC003544.

Eizaguirre, C., Lenz, T. L., Sommerfeld, R. D., Harrod, C., Kalbe, M. and Milinski, M., 2011: Parasite diversity, patterns of MHC II variation and olfactory based mate choice in diverging three-spined stickleback ecotypes. *Evolutionary Ecology*, **25** (3, SI), 605-622, DOI 10.1007/s10682-010-9424-z.

Elkins, L. J., Sims, K. W. W., Prytulak, J., Elliott, T., Mattioli, N., Blichert-Toft, J., Blusztajn, J., Dunbar, N., **Devey, C.**, Mertz, D. F., Schilling, J. G. and Murrell, M., 2011: Understanding melt generation beneath the slow-spreading Kolbeinsey Ridge using ²³⁸U, ²³⁰Th, and ²³¹Pa excesses. *Geochimica et Cosmochimica Acta*, **75** (21), 6300-6329, DOI 10.1016/j.gca.2011.08.020.

Engel, A. and Händel, N., 2011: A novel protocol for determining the concentration and composition of sugars in particulate and in high molecular weight dissolved organic matter (HMW-DOM) in seawater. *Marine Chemistry*, **127**, 180-191, DOI 10.1016/j.marchem.2011.09.004.

Engel, A., Handel, N., **Wohlers, J.**, Lunau, M., Grossart, H. P., **Sommer, U.** and **Riebesell, U.**, 2011: Effects of sea surface warming on the production and composition of dissolved organic matter during phytoplankton blooms: results from a mesocosm study. *Journal of Plankton Research*, **33** (3), 357-372, DOI 10.1093/plankt/fbq122.

Fan, L., Bo, S., Chen, H., Ye, W., **Kleinschmidt, K.**, **Baumann, H. I.**, **Imhoff, J. F.**, Kleine, M. and Cai, D., 2011: Genome Sequence of *Bacil-*

lus subtilis subsp. spizizenii gtP20b, Isolated from the Indian Ocean. *Journal of Bacteriology*, **193** (5), 1276-1277, DOI 10.1128/JB.01351-10.

Fan, L., Liu, Y., Li, Z., **Baumann, H. I.**, **Kleinschmidt, K.**, Ye, W., **Imhoff, J. F.**, Kleine, M. and Cai, D., 2011: Draft Genome Sequence of the Marine *Streptomyces* sp. Strain PP-C42, Isolated from the Baltic Sea. *Journal of Bacteriology*, **193** (14), 3691-3692, DOI 10.1128/JB.05097-11.

Fehsenfeld, S., **Kiko, R.**, **Appelhans, Y.**, Towle, D. W., Zimmer, M. and **Melzner, F.**, 2011: Effects of elevated seawater pCO₂ on gene expression patterns in the gills of the green crab, *Carcinus maenas*. *BMC Genomics*, **12** (1), p. 488, DOI 10.1186/1471-2164-12-488.

Feng, M., **Böning, C. W.**, **Biastoch, A.**, **Behrens, E.**, Weller, E. and Masumoto, Y., 2011: The reversal of the multi-decadal trends of the equatorial Pacific easterly winds, and the Indonesian Throughflow and Leeuwin Current transports. *Geophysical Research Letters*, **38**, L11604, DOI 10.1029/2011GL047291.

Fleischer, D. and Jannaschk, K., 2011: A path to filled archives. *Nature Geoscience*, **4**, 575-576, DOI 10.1038/ngeo1248.

Flögel, S., Parkin, G., Pollard, D., **Dullo, W. C.** and Wagner, T., 2011: Simulating zonal scale shifts in the partitioning of surface and subsurface freshwater flow in response to increasing pCO₂. *Climate Dynamics*, **37** (7-8), 1565-1573, DOI 10.1007/s00382-010-0929-5.

Flögel, S., **Wallmann, K.** and Kuhnt, W., 2011: Cool episodes in the Cretaceous — Exploring the effects of physical forcings on Antarctic snow accumulation. *Earth and Planetary Science Letters*, **307** (3-4), 279-288, DOI 10.1016/j.epsl.2011.04.024.

Flögel, S., **Wallmann, K.**, Poulsen, K., Zhou, J., **Oschlies, A.**, **Voigt, S.** and Kuhnt, W., 2011: Simulating the biogeochemical effects of volcanic CO₂ degassing on the oxygen-state of the

deep ocean during the Cenomanian/Turonian Anoxic Event (OAE2). *Earth and Planetary Science Letters*, **305** (3/4), 371-384, DOI 10.1016/j.epsl.2011.03.018.

Fowler, A. E., Gerner, N. V. and Sewell, M. A., 2011: Temperature and salinity tolerances of Stage 1 zoeae predict possible range expansion of an introduced portunid crab, *Charybdis japonica*, in New Zealand. *Biological Invasions*, **13** (3), 691-699, DOI 10.1007/s10530-010-9860-2.

Frank, M., 2011: Chemical twins, separated. *Nature Geoscience*, **4** (4), 220-221, DOI 10.1038/ngeo1125.

Franke, A. and **Clemmesen, C.**, 2011: Effect of ocean acidification on early life stages of Atlantic herring (*Clupea harengus* L.). *Biogeosciences (BG)*, **8**, 3697-3707, DOI 10.5194/bg-8-3697-2011.

Franssen, S. U., Gu, J., **Bergmann, N.**, Winters, G., Klostermeier, U. C., Rosenstiel, P., Bornberg-Bauer, E. and **Reusch, T. B. H.**, 2011: Transcriptomic resilience to global warming in the seagrass *Zostera marina*, a marine foundation species. *Proceedings of the National Academy of Sciences*, **108** (48), 19276-19281, DOI 10.1073/pnas.1107680108.

Franz, J., **Krahmann, G.**, Lavik, G., **Grasse, P.**, Dittmar, T. and **Riebesell, U.**, 2011: Dynamics and stoichiometry of nutrients and phytoplankton in waters influenced by the oxygen minimum zone in the eastern tropical Pacific. *Deep-Sea Research Part I-Oceanographic Research Papers*, **62**, 20-31, DOI 10.1016/j.dsr.2011.12.004.

Fricke, H., **Hissmann, K.**, **Froese, R.**, **Schauer, J.**, Plante, R. and Fricke, S., 2011: The population biology of the living coelacanth studied over 21 years. *Marine Biology*, **158** (7), 1511-1522, DOI 10.1007/s00227-011-1667-x.

Froese, R., 2011: Fishery reform slips through the net. *Nature*, **475** (7354), 7, DOI 10.1038/475007a.

Froese, R. and Quaas, M., 2011: Three options for rebuilding the cod stock in the eastern Baltic Sea. *Marine Ecology Progress Series*, **434**, 197-200, DOI 10.3354/meps09247.

Froese, R., Branch, T. A., Proelß, A., Quaas, M., Sainsbury, K. and Zimmermann, C., 2011: Generic harvest control rules for European fisheries. *Fish and Fisheries*, **12** (3), 340-351, DOI 10.1111/j.1467-2979.2010.00387.x.

Froese, R., Tsikliras, A. C. and Stergiou, K. I., 2011: Editorial note on weight-length relations of fishes. *Acta Ichthyologica et Piscatoria*, **41** (4), 261-263, DOI 10.3750/AIP2011.41.4.01.

Gallais, F., Gutscher, M. A., Graindorge, D., Chamt Rooke, N. and **Klaeschen, D.**, 2011: A Miocene tectonic inversion in the Ionian Sea (Central Mediterranean): evidence from multi-channel seismic data. *Journal of Geophysical Research - Solid Earth*, **116**, B12108, DOI 10.1029/2011JB008505.

Garbe-Schönberg, D., **Fietzke, J.**, and Günther, D., 2011: 10th European workshop on laser ablation, Analytical and Bioanalytical Chemistry, **v399**, 6, 2149-2151, doi: 10.1007/s00216-010-4616-5.

Gary, S. F., Lozier, S. M., **Böning, C. W.** and **Bias-toch, A.**, 2011: Deciphering the pathways for the deep limb of the Meridional Overturning Circulation. *Deep-Sea Research Part II-Topical Studies in Oceanography*, **58** (17-18), 1781-1797, DOI 10.1016/j.dsr.2010.10.059.

Gay, A., Takano, Y., Gilhooly, W. P., **Berndt, C.**, Heeschen, K., Suzuki, N., Saegusa, S., Nakawaga, F., Tsunogai, U., Jiang, S. Y. and Lopez, M., 2011: Geophysical and geochemical evidence of large scale fluid flow within shallow sediments in the eastern Gulf of Mexico, offshore Louisiana. *Geofluids*, **11** (1), 34-47, DOI 10.1111/j.1468-8123.2010.00304.x.

Gazel, E., **Hoernle, K.**, Carr, M. J., Herzberg, C., Saginor, I., **van den Bogaard, P.**, **Hauff, F.**, Fei-

genson, M. and Swisher III, C., 2011: Plume-subduction interaction in southern Central America: mantle upwelling and slab melting. *Lithos*, **121**, 117-134, DOI 10.1016/j.lithos.2010.10.008.

Geersen, J., **Behrmann, J. H.**, **Völker, D.**, **Krastel, S.**, Ranero, C. R., Diaz-Naveas, J. and **Weinrebe, R. W.**, 2011: Active tectonics of the South Chilean marine fore arc (35°S - 40°S). *Tectonics*, **30**, TC3006, DOI 10.1029/2010TC002777.

Geersen, J., **Völker, D.**, **Behrmann, J. H.**, Reichert, C. and **Krastel, S.**, 2011: Pleistocene giant slope failures offshore Arauco Peninsula, Southern Chile. *Journal of the Geological Society London*, **168**, 1237-1248.

Geldmacher, J., **Hoernle, K.**, Hanan, B. B., Blicher-Toft, J., **Hauff, F.**, Gill, J. B. and **Schmincke, H. U.**, 2011: Hafnium isotopic variations in East Atlantic intraplate volcanism. *Contributions to Mineralogy and Petrology*, **162** (1), 21-36, DOI 10.1007/s00410-010-0580-5.

Glessmer, M., **Park, W.** and **Oschlies, A.**, 2011: Simulated reduction in upwelling of tropical oxygen minimum waters in a warmer climate. *Environmental Research Letters*, **6** (4), 045001, DOI 10.1088/1748-9326/6/4/045001.

Glock, N., **Eisenhauer, A.**, Milker, Y., **Liebetrau, V.**, **Schönfeld, J.**, **Mallon, J.**, **Sommer, S.** and **Hensen, C.**, 2011: Environmental influences on the pore density of Bolivina spissa (Cushman). *Journal of Foraminiferal Research*, **41** (1), 22-32, DOI 10.2113/gsjfr.41.1.22.

Gocke, K., Lenz, J., **Koppe, R.**, **Rheinheimer, G.** and **Hoppe, H. G.**, 2011: Der Anteil der Bakterien am Abbau der organischen Substanz im Elbe-Ästuar. *Hydrologie und Wasserbewirtschaftung*, **55** (4), 188-198,

Gorbach, N. V. and **Portnyagin, M. V.**, 2011: Geology and petrology of the lava complex of Young Shiveluch Volcano, Kamchatka. *Petrology*, **19** (2), 134-166, DOI 10.1134/S0869591111020068.

Greatbatch, R. J. and Hughes, C. W., 2011:

Comment on „Why western boundary currents are diffusive: A link between bottom pressure torque and bolus velocity“ by C. Eden and D. Olbers. *Ocean Modelling*, **39**, 416-424, DOI 10.1016/j.ocemod.2010.12.001.

Griffith, E. M., Paytan, A., **Eisenhauer, A.**, Bullen, T. D. and Thomas, E., 2011: Seawater calcium isotope ratios across the Eocene-Oligocene transition. *Geology*, **39** (7), 683-686, DOI 10.1130/G31872.1.

Grujic, D., **Stipp, M.** and Wooden, J. L., 2011: Thermometry of quartz mylonites: Importance of dynamic recrystallization on Ti-in-quartz reequilibration. *Geochemistry Geophysics Geosystems*, **12** (6), Q06012, DOI 10.1029/2010GC003368.

Gröner, F., **Lenz, M.**, **Wahl, M.** and Jenkins, S. R., 2011: Stress resistance in two colonial ascidians from the Irish Sea: the recent invader *Didemnum vexillum* is more tolerant to low salinity than the cosmopolitan *Diplosoma listerianum*. *Journal of Experimental Marine Biology and Ecology*, **409**, 48-52, DOI 10.1016/j.jembe.2011.08.002.

Gärtner, A., **Blümel, M.**, **Wiese, J.** and **Imhoff, J. F.**, 2011: Isolation and characterisation of bacteria from the Eastern Mediterranean deep sea. *Antonie van Leeuwenhoek: international journal of general and molecular microbiology*, **100** (3), 421-435, DOI 10.1007/s10482-011-9599-5.

Gärtner, A., **Ohlendorf, B.**, **Schulz, D.**, **Zinnecker, H.**, **Wiese, J.** and **Imhoff, J. F.**, 2011: Levantilides A and B, 20-Membered Macrolides from a Micromonospora Strain Isolated from the Mediterranean Deep Sea Sediment. *Marine Drugs*, **9** (1), 98-108, DOI 10.3390/md9010098.

Haarmann, T., **Hathorne, E. C.**, Mohtadi, M., Groeneveld, J., Kölling, M. and Bickert, T., 2011: Mg/Ca ratios of single planktonic foraminifer shells and the potential to reconstruct the thermal seasonality of the water column. *Paleoceanography*, **26** (3), PA3218, DOI 10.1029/2010PA002091.

Haase, K. M., Beier, C., Fretzdorff, S., Leat, P. T.,

Livermore, R. A., Barry, T. L., Pearce, J. A. and **Hauff, F.**, 2011: Magmatic evolution of a dyking spreading axis: evidence for the interaction of tectonics and mantle heterogeneity from the fossil Phoenix Ridge, Drake Passage. *Chemical Geology*, **280**, 115-125, DOI 10.1016/j.chemgeo.2010.11.002.

Haase, K. M., Regelous, M., Duncan, R. A., Brandl, P. A., Stroncik, N. and **Grevemeyer, I.**, 2011: Insights into mantle composition and mantle melting beneath mid-ocean ridges from postspreading volcanism on the fossil Galapagos Rise. *Geochemistry Geophysics Geosystems*, **12**, Q0AC11, DOI 10.1029/2010GC003482.

Halama, R., John, T., **Herms, P.**, **Hauff, F.** and **Schenk, V.**, 2011: A stable (Li, O) and radiogenic (Sr, Nd) isotope perspective on metamorphic processes in a subducting slab. *Chemical Geology*, **281**, 151-166, DOI 10.1016/j.chemgeo.2010.12.001.

Halfar, J., **Hetzinger, S.**, Adey, W., Zack, T., Gamboa, G., Kunz, B., Williams, B. and Jacob, D. E., 2011: Coralline algal growth-increment widths archive North Atlantic climate variability. *Palaeogeography Palaeoclimatology Palaeoecology*, **302** (1/2), 71-80, DOI 10.1016/j.palaeo.2010.04.009.

Halfar, J., Williams, B., **Hetzinger, S.**, Steneck, R. S., Lebednik, P., Winsborough, C., Omar, A., Chan, P. and Wanamaker, A. D., 2011: 225 years of Bering Sea climate and ecosystem dynamics revealed by coralline algal growth-increment widths. *Geology*, **39** (6), 579-582, DOI 10.1130/g31996.1.

Hannington, M., Jamieson, J., Monecke, T., **Petersen, S.** and Beaulieu, S., 2011: The abundance of seafloor massive sulfide deposits. *Geology*, **39** (12), 1155-1158, DOI 10.1130/G32468.1.

Harders, R., Ranero, C. R., **Weinrebe, W.** and **Behrmann, J. H.**, 2011: Submarine slope failures along the convergent continental margin of the Middle America Trench. *Geochemistry,*

Geophysics, Geosystems, **12** (6), Q05S32, DOI 10.1029/2010GC003401.

Hasenclever, J., Phipps Morgan, J., Hort, M. and **Rüpke, L. H.**, 2011: 2D and 3D numerical models on compositionally buoyant diapirs in the mantle wedge. *Earth and Planetary Science Letters*, **311** (1-2), 53-68, DOI 10.1016/j.epsl.2011.08.043.

Harlay, J., Chou, L., De Bodt, C., Van Oostende, N., **Piontek, J.**, Suykens, K., **Engel, A.**, Sabbe, K., Groom, S., Delille, B., and Borges, A. V., 2011: Biogeochemistry and carbon mass balance of a coccolithophore bloom in the northern Bay of Biscay (June 2006). *Deep-Sea Res Part I – Oceanogr Res Papers*, **58** (2), 111-127, DOI 10.1016/j.dsr.2010.11.005.

Haslob, H., Tomkiewicz, J., **Hinrichsen, H. H.** and Kraus, G., 2011: Spatial and interannual variability in Baltic sprat batch fecundity. *Fisheries Research*, **110** (2), 289-297, DOI 10.1016/j.fishres.2011.04.018.

Hathorne, E. C., Felis, T., James, R. H. and Thomas, A., 2011: Laser ablation ICP-MS screening of corals for diagenetically affected areas applied to Tahiti corals from the last deglaciation. *Geochimica et Cosmochimica Acta*, **75** (6), 1490-1506, DOI 10.1016/j.gca.2010.12.011.

Hawkins, E., Robson, J., Sutton, R., Smith, D. and **Keenlyside, N. S.**, 2011: Evaluating the potential for statistical decadal predictions of sea surface temperatures with a perfect model approach. *Climate Dynamics*, **37** (11-12), 2495-2509, DOI 10.1007/s00382-011-1023-3.

Haynert, K., **Schönfeld, J.**, **Riebesell, U.** and **Polovodova, I.**, 2011: Biometry and dissolution features of the benthic foraminiferal species *Ammonia aomoriensis* at high pCO₂. *Marine Ecology Progress Series*, **432**, 53-67, DOI 10.3354/meps09138.

Heberer, B., **Behrmann, J. H.** and Rahn, M. K., 2011: Source-to-sink relationships along the South-Central Chilean margin: evidence from

detrital apatite fission-track analysis. *Basin Research*, **23** (5), 551-570, DOI 10.1111/j.1365-2117.2011.00504.x.

Heeschen, K. U., **Haeckel, M., Klaucke, I., Ivanov, M. K. and Bohrmann, G.**, 2011: Quantifying in-situ gas hydrates at active seep sites in the eastern Black Sea using pressure coring technique. *Biogeosciences (BG)*, **8** (12), 3555-3565, DOI 10.5194/bg-8-3555-2011.

Heinemann, A., Hiebenthal, C., Fietzke, J., Eisenhauer, A. and Wahl, M., 2011: Disentangling the Biological and Environmental Control of *M. edulis* Shell Chemistry. *Geochemistry, Geophysics, Geosystems*, **12** (3), Q03009, DOI 10.1029/2010GC003340.

Heino, M., Porteiro, F. M., Sutton, T. T., Falken-
haug, T., Godo, O. R. and **Piatkowski, U.**, 2011: Catchability of pelagic trawls for sampling deep-living nekton in the mid-North Atlantic. *ICES Journal of Marine Science*, **68** (2), 377-389, DOI 10.1093/icesjms/fsq089.

Heller, M. and Croot, P., 2011: Reply to comment on "Application of a superoxide (O_2^-) thermal sources (SOTS-1) for the determination and calibration of O_2^- fluxes in seawater". *Analytica Chimica Acta*, **702** (1), 146-147, DOI 10.1016/j.aca.2011.05.023.

Heller, M. and Croot, P., 2011: Superoxide decay as a probe for speciation changes during dust dissolution in Tropical Atlantic surface waters near Cape Verde. *Marine Chemistry*, **126** (1-4), 37-55, DOI 10.1016/j.marchem.2011.03.006.

Henkel, S., Strasser, M., Schwenk, T., Hanebuth, T. J. J., Hüsener, J., Arnold, G. L., **Winkelmann, D.**, Formolo, M., Tomasini, J., **Krastel, S.** and Kasten, S., 2011: An interdisciplinary investigation of a recent submarine mass transport deposit at the continental margin off Uruguay. *Geochemistry Geophysics Geosystems*, **12** (8), Q08009, DOI 10.1029/2011GC003669.

Hetzinger, S., Halfar, J., Zack, T., Gamboa, G.,

Jacob, D. E., Kunz, B. E., Kronz, A., Adey, W., Lebednik, P. A. and Steneck, R. S., 2011: High-resolution analysis of trace elements in crustose coralline algae from the North Atlantic and North Pacific by laser ablation ICP-MS. *Palaeogeography Palaeoclimatology Palaeoecology*, **302** (1/2), 81-94, DOI 10.1016/j.palaeo.2010.06.004.

Hidalgo, M., Rouyer, T., **Molinero, J. C.**, Massutí, E., Moranta, J., Guijarro, B. and Stenseth, N. C., 2011: Synergistic effects of fishing-induced demographic changes and climate variation on fish population dynamics. *Marine Ecology Progress Series*, **426**, 1-12, DOI 10.3354/meps09077.

Hildner, E., Klügel, A. and **Hauff, F.**, 2011: Mag-
ma storage and ascent during the 1995 eruption of Fogo, Cape Verde Archipelago. *Contributions to Mineralogy and Petrology*, **162** (4), 751-772, DOI 10.1007/s00410-011-0623-6.

Hinrichsen, H. H., Dickey-Collas, M., Huret, M., Peck, M. A. and Vikebo, F. B., 2011: Evaluating the suitability of coupled biophysical models for fishery management. *ICES Journal of Marine Science*, **68** (7), 1478-1487, DOI 10.1093/icesjms/fsr056.

Hinrichsen, H. H., Huwer, B., Makarchouk, A., **Petereit, C.**, Schaber, M. and **Voss, R.**, 2011: Climate-driven long-term trends in Baltic Sea oxygen concentrations and the potential consequences for eastern Baltic cod (*Gadus morhua*). *ICES Journal of Marine Science*, **68** (10), 2019-2028, DOI 10.1093/icesjms/fsr145.

Hoernle, K., Hauff, F., Kokfelt, T., Haase, K. M., Garbe-Schönberg, D. and **Werner, R.**, 2011: On- and off-axis chemical heterogeneities along the South Atlantic Mid-Ocean-Ridge (5-11 degrees S): Shallow or deep recycling of ocean crust and/or intraplate volcanism?. *Earth and Planetary Science Letters*, **306**, 86-97, DOI 10.1016/j.epsl.2011.03.032.

Hoernle, K., Hauff, F., Werner, R., van den Bogaard, P., Gibbons, A. D., Conrad, S. and Mül-

ler, R. D., 2011: Origin of Indian Ocean Seamount Province by shallow recycling of continental lithosphere. *Nature Geoscience*, **4** (12), 883-887, DOI 10.1038/ngeo1331.

Hu, M. Y., Tseng, Y. C., Lin, L. Y., Chen, P. Y., Char-
mantier-Daures, M., Hwang, P. P. and **Melzner, F.**, 2011: New insights into ion regulation of cephalopod molluscs: a role of epidermal ionocytes in acid-base regulation during embryogenesis. *American Journal of Physiology: Regulatory, Integrative and Comparative Physiology*, **301** (6), R1700-R1709, DOI 10.1152/ajpregu.00107.2011.

Hu, M. Y. A., Tseng, Y. C., **Stumpp, M.**, Gutowska, M., **Kiko, R.**, Lucassen, M. and **Melzner, F.**, 2011: Elevated seawater pCO_2 differentially affects branchial acid-base transporters over the course of development in the cephalopod *Sepia officinalis*. *American Journal of Physiology: Regulatory, Integrative and Comparative Physiology*, **300**, 1100-1114.

Huwer, B., **Clemmesen, C.**, Grønkjær, P. and Köster, F. W., 2011: Vertical distribution and growth performance of Baltic cod larvae – Field evidence for starvation-induced recruitment regulation during the larval stage?. *Progress in Oceanography*, **91** (4), 382-396, DOI 10.1016/j.pocean.2011.04.001.

Hügler, M., Petersen, J. M., Dubilier, N., **Imhoff, J. F.** and Sievert, S. M., 2011: Pathways of Carbon and Energy Metabolism of the Epibiotic Community Associated with the Deep-Sea Hydrothermal Vent Shrimp *Rimicaris exoculata*. *PLoS ONE*, **6** (1), e16018, DOI 10.1371/journal.pone.0016018.

Imhoff, J. F., Labes, A. and Wiese, J., 2011: Bio-mining the microbial treasures of the ocean: New natural products. *Biotechnology Advances*, **29** (5), 468-482, DOI 10.1016/j.biotechadv.2011.03.001.

Jaschinski, S. and Sommer, U., 2011: How do nutrient conditions and species identity influence

the impact of mesograzers in eelgrass-epiphyte systems?. *Marine Biology*, **158** (1), 193-203, DOI 10.1007/s00227-010-1551-0.

Jaschinski, S., Brepohl, D. C. and **Sommer, U.**, 2011: Seasonal variation in carbon sources of mesograzers and small predators in an eelgrass community: stable isotope and fatty acid analyses. *Marine Ecology Progress Series*, **431**, 69-82, DOI 10.3354/meps09143.

Jaschinski, S., Brepohl, D. C. and **Sommer, U.**, 2011: The trophic importance of epiphytic algae in a freshwater macrophyte system (*Potamogeton perfoliatus* L.): stable isotope and fatty acid analyses. *Aquatic Sciences*, **37**, 91-101, DOI 10.1007/s00027-010-0163-6.

Jiang, Y., Cao, Y. R., **Wiese, J.**, Tang, S. K., Xu, L. H., **Imhoff, J. F.** and Jiang, C. L., 2011: *Streptomyces sparsus*, sp. nov., a novel member of the genus *Streptomyces* from saline and alkaline soil in China. *International Journal of Systematic and Evolutionary Microbiology*, **61** (7), 1601-1605, DOI 10.1099/ijs.0.020669-0.

Joassin, P., Delille, B., Soetaert, K., Harlay, J., Borges, A. V., Chou, L., **Riebesell, U.**, Suykens, K. and Gregoire, M., 2011: Carbon and nitrogen flows during a bloom of the coccolithophore *Emiliania huxleyi*: modeling a mesocosm experiment. *Journal of Marine Systems*, **85** (3-4), 71-85, DOI 10.1016/j.jmarsys.2010.11.007.

Jochum, K. P., Wilson, S. A., Abouchami, W., Amini, M., Chmieleff, J., **Eisenhauer, A.**, Hegner, E., Iaccheri, L. M., Kieffer, B., Krause, J., McDonough, W. F., Mertz-Kraus, R., Raczek, I., Rudnick, R. L., Scholz, D., Steinhofel, G., Stoll, B., Stracke, A., Tonarini, S., Weis, D., Weis, U. and Woodhead, J. D., 2011: GSD-1G and MPI-DING Reference Glasses for In Situ and Bulk Isotopic Determination. *Geostandards and Geoanalytical Research* (35), 193-226, DOI 10.1111/j.1751-908X.2010.00114.x.

John, T., Scambelluri, M., Frische, M., Barnes, J.

D. and Bach, W., 2011: Dehydration of subducting serpentinite: implications for halogen mobility in subduction zones and the deep halogen cycle. *Earth and Planetary Science Letters*, **308**, 65-76, DOI 10.1016/j.epsl.2011.05.038.

Johns, W. E., Baringer, M. O., Beal, L. M., Cunningham, S. A., **Kanzow, T.**, Bryden, H. L., Hirschi, J. J. M., Marotzke, J., Meinen, C. S., Shaw, B. and Curry, R., 2011: Continuous, Array-Based Estimates of Atlantic Ocean Heat Transport at 26.5°N. *Journal of Climate*, **24** (10), 2429-2449, DOI 10.1175/2010JCLI3997.1.

Jones, A., Qin, G., Strong, K., Walker, K. A., McLinden, C. A., **Toohey, M.**, Kerzenmacher, T., Bernath, P. F. and Boone, C. D., 2011: A global inventory of stratospheric NO_y from ACE-FTS. *Journal of Geophysical Research*, **116** (D17), D17304, DOI 10.1029/2010JD015465.

Joye, S. B., Leifer, I., MacDonald, I. R., Chanton, J. P., Meile, C. D., Teske, A. P., Kostka, J. E., Chistoserdova, L., Coffin, R., Hollander, D., Kastner, M., Montoya, J. P., Rehder, G., Solomon, E., **Treude, T.** and Villareal, T. A., 2011: Comment on „A Persistent Oxygen Anomaly Reveals the Fate of Spilled Methane in the Deep Gulf of Mexico“. *Science*, **332** (6033), p. 1033, DOI 10.1126/science.1203307.

Kalvelage, T., Jensen, M. M., Contreras, S., Revsbech, N. P., Lam, P., Günter, M., **LaRoche, J.**, Lavik, G. and Kuypers, M. M. M., 2011: Oxygen Sensitivity of Anammox and Coupled N-Cycle Processes in Oxygen Minimum Zones. *PLoS ONE*, **6** (12), DOI 10.1371/journal.pone.0029299.

Karas, C., Nürnberg, D., Tiedemann, R. and Garbe-Schönberg, D., 2011: Pliocene Indonesian Throughflow and Leeuwin Current dynamics: Implications for Indian Ocean polar heat flux. *Paleoceanography*, **26** (2), PA2217, DOI 10.1029/2010PA001949.

Karas, C., Nürnberg, D., Tiedemann, R. and Garbe-Schönberg, D., 2011: Pliocene climate

change of the Southwest Pacific and the impact of ocean gateways. *Earth and Planetary Science Letters*, **301** (1-2), 117-124, DOI 10.1016/j.epsl.2010.10.028.

Karstensen, J. and Lorbacher, K., 2011: A practical indicator for surface ocean heat and freshwater buoyancy fluxes and its application to the NCEP reanalysis data. *Tellus Series A: Dynamic meteorology and oceanography*, **63**, 338-347. DOI 10.1111/j.1600-0870.2011.00510.x.

Keeling, R. F. and **Visbeck, M.**, 2011: On the Linkage between Antarctic Surface Water Stratification and Global Deep-Water Temperature. *Journal of Climate*, **24** (14), 3345-3557, DOI 10.1175/2011JCLI3642.1.

Keller, D. and Hood, R., 2011: Modeling the seasonal autochthonous sources of dissolved organic carbon and nitrogen in the upper Chesapeake Bay. *Ecological Modelling*, **222** (5), 1139–1162, DOI 10.1016/j.ecolmodel.2010.12.014.

Keller, L. M. and **Stipp, M.**, 2011: The single-slip hypothesis revisited: Crystal-preferred orientations of sheared quartz aggregates with increasing strain in nature and numerical simulation. *Journal of Structural Geology*, **33** (10), 1491-1500. DOI 10.1016/j.jsg.2011.07.008.

Kim, B. Y., Willbold, S., Kulik, A., Helaly, S. E., **Zinecker, H., Wiese, J., Imhoff, J. F.**, Goodfellow, M., Süssmuth, R. D. and Fiedler, H. P., 2011: Elaiomycins B and C, novel alkylhydrazides produced by *Streptomyces* sp. BK 190*. *The Journal of Antibiotics*, **64** (8), 595-597, DOI 10.1038/ja.2011.53.

Kim, J. M., Lee, K., Shin, K., Yang, E. J., **Engel, A.**, Karl, D. M., and Kim, H. C., 2011: Shifts in biogenic carbon flow from particulate to dissolved forms under high carbon dioxide and warm ocean conditions. *Geophys Res Lett*, **38** (8), doi: 10.1019/2011GL047346.

Kim, O. S., **Imhoff, J. F.**, Witzel, K. P. and Junier, P., 2011: Distribution of denitrifying bacterial

communities in the stratified water column and sediment–water interface in two freshwater lakes and the Baltic Sea. *Aquatic Ecology*, **45** (1), 99–112, DOI 10.1007/s10452-010-9335-7.

Kindler, P., Godefroid, F., Chiaradia, M., **Ehlert, C.**, **Eisenhauer, A.**, **Frank, M.**, Hasler, C. A. and Samankassou, E., 2011: Discovery of Miocene to early Pleistocene deposits on Mayaguana, Bahamas: Evidence for recent active tectonism on the North American margin. *Geology*, **39** (6), 523–526, DOI 10.1130/G32011.1.

Kisakurek, B., **Eisenhauer, A.**, **Böhm, F.**, **Hathorne, E. C.** and Erez, J., 2011: Controls on calcium isotope fractionation in cultured planktic foraminifera, *Globigerinoides ruber* and *Globigerinella siphonifera*. *Geochimica et Cosmochimica Acta*, **75** (2), 427–443, DOI 10.1016/j.gca.2010.10.015.

Klevenz, V., Bach, W., Schmidt, K., Hentscher, M., Koschinsky, A. and **Petersen, S.**, 2011: Geochemistry of vent fluid particles formed during initial hydrothermal fluid–seawater mixing along the Mid-Atlantic Ridge. *Geochemistry Geophysics Geosystems*, **12**, Q0AE05, DOI 10.1029/2011GC003704.

Klügel, A., **Hansteen, T. H.**, **van den Bogaard, P.**, Strauss, H. and **Hauff, F.**, 2011: Holocene fluid venting at an extinct Cretaceous seamount, Canary archipelago. *Geology*, **39**, 855–858, DOI 10.1130/G32006.1.

Kopp, H., **Weinzierl, W.**, Becel, A., Charvis, P., Evain, M., **Flueh, E. R.**, Gailler, A., Galve, A., Hirn, A., Kandilarov, A., **Klaeschen, D.**, Laigle, M., **Papenberg, C.**, **Planert, L.** and Roux, E., 2011: Deep structure of the central Lesser Antilles Island Arc: relevance for the formation of continental crust. *Earth and Planetary Science Letters*, **304** (1–2), 121–134, DOI 10.1016/j.epsl.2011.01.024.

Koulakov, I., **Kopp, H.** and Stupina, T., 2011: Finding a realistic velocity distribution based on iterat-

ing forward modelling and tomographic inversion. *Geophysical Journal International*, **186** (1), 349–358, DOI 10.1111/j.1365-246X.2011.05034.x.

Kramer, M. and **Kiko, R.**, 2011: Brackish meltponds on Arctic sea ice – a new habitat for marine metazoans. *Polar Biology*, **34** (4), 603–608, DOI 10.1007/s00300-010-0911-z.

Kramer, M., Swadling, K. M., Meiners, K. M., **Kiko, R.**, Scheltz, A., Nicolaus, M. and Werner, I., 2011: Antarctic sympagic meiofauna in winter: Comparing diversity, abundance and biomass between perennially and seasonally ice-covered regions. *Deep-Sea Research Part II-Topical Studies in Oceanography*, **58** (9–10), 1062–1074, DOI 10.1016/j.dsr2.2010.10.029.

Krastel, S., Wefer, G., Hanebuth, T. J. J., Antobreh, A. A., Freudenthal, T., Preu, B., Schwenk, T., Strasser, M., Violante, R. and **Winkelmann, D.**, 2011: Sediment dynamics and geohazards off Uruguay and the de la Plata River region (northern Argentina and Uruguay). *Geo-Marine Letters*, **31**, 271–283, DOI 10.1007/s00367-011-0232-4.

Krebs, U., **Park, W.** and Schneider, B., 2011: Pliocene aridification of Australia caused by tectonically induced weakening of the Indonesian throughflow. *Palaeogeography, Palaeoclimatology, Palaeoecology*, **309** (1–2), 111–117, DOI 10.1016/j.palaeo.2011.06.002.

Kriest, I. and **Oschlies, A.**, 2011: Numerical effects on organic-matter sedimentation and remineralization in biogeochemical ocean models. *Ocean Modelling*, **39** (3–4), 275–283, DOI 10.1016/j.ocemod.2011.05.001.

Krug, S., **Schulz, K.** and **Riebesell, U.**, 2011: Effects of changes in carbonate chemistry speciation on *Coccolithus braarudii*: a discussion of coccolithophorid sensitivities. *Biogeosciences (BG)*, **8**, 771–777, DOI 10.5194/bg-8-771-2011.

Krumpen, T., Hölemann, J. A., Willmes, S., Morales Maqueda, M. A., Busche, T., **Dmitrenko, I. A.**, Gerdes, R., Haas, C., Heinemann, G., Hendricks,

S., **Kassens, H.**, Rabenstein, L. and Schröder, D., 2011: Sea ice production and water mass modification in the eastern Laptev Sea. *Journal of Geophysical Research – Oceans*, **116**, C05014, DOI 10.1029/2010JC006545.

Kröncke, I., Reiss, H., Eggleton, J. D., Aldridge, J., Bergman, M. J. N., Cochran, S., Craeymeersch, J. A., Degraer, S., Desroy, N., Dewarumez, J. M., Duineveld, G. C. A., Essink, K., Hillewaert, H., Lavaleye, M. S. S., Moll, A., Nehring, S., Newell, R., Oug, E., Pohlmann, T., Rachor, E., Robertson, M., **Rumohr, H.**, Schratzberger, M., Smith, R., Berghe, E. V., van Dalfsen, J., van Hoey, G., Vincx, M., Willems, W. and Rees, H. L., 2011: Changes in North Sea macrofauna communities and species distribution between 1986 and 2000. *Estuarine, Coastal and Shelf Science*, **94** (1), 1–15, DOI 10.1016/j.ecss.2011.04.008.

Kubicek, A., Bessho, K., Nakaoka, M., **Wahl, M.** and **Lenz, M.**, 2011: Inducible defence and its modulation by environmental stress in the red alga *Chondrus yendoii* (Yamada and Mikami, 1965) from Honshu Island, Japan. *Journal of Experimental Marine Biology and Ecology*, **397** (2), 208–213, DOI 10.1016/j.jembe.2010.11.025.

Kuhnt, W., Holbourn, A. and Moullade, M., 2011: Transient global cooling at onset of early Aptian Anoxic Event (OAE1a). *Geology*, **39** (4), 323–326, DOI 10.1130/G31554.1.

Kutterolf, S., **Freundt, A.** and **Burkert, C.**, 2011: Eruptive history and magmatic evolution of the 1.9 ka Plinian dacitic Chiltepe Tephra from Apoyeque volcano in west-central Nicaragua. *Bulletin of Volcanology*, **73** (7), 811–831, DOI 10.1007/s00445-011-0457-0.

Lube, G., Huppert, H. E., Sparks, R. S. J. and **Freundt, A.**, 2011: Granular column collapses down rough, inclined channels. *Journal of Fluid Mechanics*, **675**, 347–368, DOI 10.1017/jfm.2011.21.

Lachnit, T., Meske, D., **Wahl, M.**, Harder, T. and Schmitz-Streit, R., 2011: Epibacterial community

patterns on marine macroalgae are host-specific but temporally variable. *Environmental Microbiology*, **13** (3), 655-665, DOI 10.1111/j.1462-2920.2010.02371.x.

Laloi, D., **Eizaguirre, C.**, Fédérici, P. and Masot, M., 2011: Female choice for heterozygous mates changes along successive matings in a lizard. *Behavioural Processes*, **88** (3), 149-154, DOI 10.1016/j.beproc.2011.08.011.

Lam, P., Jensen, M. M., **Kock, A.**, Lettmann, K. A., Plancherel, Y., Lavik, G., **Bange, H.** and Kuypers, M. M. M., 2011: Origin and fate of the secondary nitrite maximum in the Arabian Sea. *Biogeosciences (BG)*, **8**, 1565-1577, DOI 10.5194/bg-8-1565-2011.

Latif, M., 2011: Uncertainty in climate change projections. *Journal of Geochemical Exploration*, 110: Sustainability of Geochemical Cycling, 19th International Symposium on Environmental Biogeochemistry „Environmental Changes and Sustainability of Biogeochemical Cycling“ (1), 1-7, DOI 10.1016/j.gexplo.2010.09.011.

Latif, M. and **Keenlyside, N.**, 2011: A Perspective on Decadal Climate Variability and Predictability. *Deep-Sea Research Part II-Topical Studies in Oceanography*, **58** (17-18), 1880-1894, DOI 10.1016/j.dsr2.2010.10.066.

Lebas, E., Le Friant, A., Boudon, G., Watt, S., Talling, S., Feuillet, N., Deplus, C., **Berndt, C.** and Vardy, M., 2011: Multiple widespread landslides during the long-term evolution of a volcanic island: insights from high-resolution seismic data, Montserrat, Lesser Antilles. *Geochemistry, Geophysics, Geosystems*, **12** (5), Q05006, DOI 10.1029/2010GC003451, 2011.

Lebrato, M., **Pahlow, M.**, **Oschlies, A.**, Pitt, K. A., Jones, D. O. B., **Molinero, J. C.** and Condon, R. H., 2011: Depth attenuation of organic matter export associated with jelly falls. *Limnology and Oceanography*, **56**, 1917-1928.

Lee, K., Sabine, C. L., **Tanhua, T.**, Kim, T. W.,

Feely, R. A. and Kim, H. C., 2011: Roles of marginal seas in absorbing and storing fossil fuel CO₂. *Energy & Environmental Science*, **4** (4), 1133, DOI 10.1039/C0EE00663G.

Lee, S. K., **Park, W.**, van Sebille, E., Baringer, M. O., Wang, C., Enfield, D. B., Yeager, S. and Kirtman, B. P., 2011: What Caused the Significant Increase in Atlantic Ocean Heat Content Since the mid-20th Century?. *Geophysical Research Letters*, **38**, L17607, DOI 10.1029/2011GL048856.

Lehmann, A., **Getzlaff, K.** and **Harlaß, J.**, 2011: Detailed assessment of climate variability of the Baltic Sea area for the period 1958-2009. *Climate Research*, **46**, 185-196, DOI 10.3354/cr00876.

Lehtiniemi, M., **Lehmann, A.**, **Javidpour, J.** and Myrberg, K., 2011: Spreading and physico-biological reproduction limitations of the invasive American comb jelly *Mnemiopsis leidyi* in the Baltic Sea. *Biol. Invasions*, DOI 10.1007/s10530-011-0066-z.

Lenz, M., da Gama, B. A. P., Gerner, N. V., Gobin, J., Gröner, F., Harry, A., Jenkins, S. R., Kraufvelin, P., Mummelthei, C., Sareyka, J., Xavier, E. A. and **Wahl, M.**, 2011: Non-native marine invertebrates are more tolerant towards environmental stress than taxonomically related native species: Results from a globally replicated study. *Environmental Research*, **111** (7, SI), 943-952, DOI 10.1016/j.envres.2011.05.001.

Levermann, A. n., Bamber, J. L., Drijfhout, S., Ganopolski, A., Haerberli, W., Harris, N. R. P., Huss, M., **Krüger, K.**, Lenton, T. M., Lindsay, R. W., Notz, D., Wadhams, P. and Weber, S., 2011: Potential climatic transitions with profound impact on Europe - Review of the current state of six tipping elements of the climate system. *Climatic Change*, **110** (3-4), 845-878, DOI 10.1007/s10584-011-0126-5.

Li, S., Kusky, T. M., Zhao, G., Liu, X., Wang, L., **Kopp, H.**, **Hoernle, K.**, Zhang, G. and Dai, L., 2011: Thermochronological constraints on two-

stage extrusion of HP/UHP terranes in the Dabie-Sulu orogen, east-central China. *Tectonophysics*, **504**, 25-42, DOI 10.1016/j.tecto.2011.01.017.

Lischka, S., **Büdenbender, J.**, Boxhammer, T. and **Riebesell, U.**, 2011: Impact of ocean acidification and elevated temperatures on early juveniles of the polar shelled pteropod *Limacina helicina*: mortality, shell degradation, and shell growth. *Biogeosciences (BG)*, **8**, 919-932, DOI 10.5194/bg-8-919-2011.

Lopez Lopez, L., Preciado, I., Velasco, F., Olaso, I. and Gutiérrez-Zabala, J. L., 2011: Resource partitioning amongst five coexisting species of gurnards (*Scorpaeniforme: Triglidae*): Role of trophic and habitat segregation. *Journal of Sea Research*, **66** (2), 58-68, DOI 10.1016/j.seares.2011.04.012.

Lustrino, M., **Duggen, S.** and Rosenberg, C. L., 2011: The Central-Western Mediterranean: anomalous igneous activity in an anomalous collisional tectonic setting. *Earth-Science Reviews*, **104**, 1-40, DOI 10.1016/j.earscirev.2010.08.002.

Löptien, U., 2011: Steady states and sensitivities of commonly used pelagic ecosystem model components. *Ecological Modelling*, **222** (8), 1376-1386, DOI 10.1016/j.ecolmodel.2011.02.005.

Löptien, U. and Meier, H. E. M., 2011: The influence of increasing water turbidity on the sea surface temperature in the Baltic Sea: A model sensitivity study. *Journal of Marine Systems*, **88** (2), 323-331, DOI 10.1016/j.jmarsys.2011.06.001.

Lüschen, E., Müller, C., **Kopp, H.**, Engels, M., Lutz, R., **Planert, L.**, **Shulgin, A.** and Djajadihardja, Y. S., 2011: Structure, evolution and tectonic activity of the eastern Sunda forearc, Indonesia, from marine seismic investigations. *Tectonophysics*, **508** (1-4), 6-21, DOI 10.1016/j.tecto.2010.06.008.

Mackinder, L., Wheeler, G., Schroeder, D., von Dassow, P., **Riebesell, U.** and Brownlee, C., 2011: Expression of biomineralization-related

ion transport genes in *Emiliania huxleyi*. *Environmental Microbiology*, **13** (12), 3250-3265, DOI 10.1111/j.1462-2920.2011.02561.x.

Makhotin, M. S. and **Dmitrenko, I. A.**, 2011: Interannual variability of Pacific summer waters in the Arctic Ocean. *Doklady Earth Sciences*, **438** (1), 730-732, DOI 10.1134/S1028334X11050345.

Margreth, S., Gennari, G., **Rüggeberg, A.**, Comas, M. C., Pinheiro, L. M. and Spezzaferri, S., 2011: Growth and demise of cold-water coral ecosystems on mud volcanoes in the West Alboran Sea: The messages from the planktonic and benthic foraminifera. *Marine Geology*, **282** (1/2), 26-39, DOI 10.1016/j.margeo.2011.02.006.

Marohn, L., Hilge, V., **Zumholz, K.**, Klügel, A., Anders, H. and Hanel, R., 2011: Temperature dependency of element incorporation into European eel (*Anguilla anguilla*) otoliths. *Analytical and Bioanalytical Chemistry*, **399** (6), 2175-2184, DOI 10.1007/s00216-010-4412-2.

Mayr, C., Försterra, G., Häussermann, V., Wunderlich, A., Grau, J., **Zieringer, M.** and Altenbach, A., 2011: Stable isotope variability in a Chilean fjord food web: implications for N- and C-cycles. *Marine Ecology Progress Series*, **428**, 89-104, DOI 10.3354/meps09015.

McGinnis, D., **Cherednichenko, S.**, **Sommer, S.**, Berg, P., **Rovelli, L.**, **Schwarz, R.**, Glud, R. N. and **Linke, P.**, 2011: Simple, robust eddy correlation amplifier for aquatic dissolved oxygen and hydrogen sulfide flux measurements. *Limnology and Oceanography: Methods*, **9**, 340-347, DOI 10.4319/lom.2011.9.340.

McGinnis, D., **Schmidt, M.**, DelSontro, T., Themann, S., **Rovelli, L.**, **Reitz, A.** and **Linke, P.**, 2011: Discovery of a natural CO₂ seep in the German North Sea: implications for shallow dissolved gas and seep detection. *Journal of Geophysical Research - Oceans*, **116**, C03013, DOI 10.1029/2010JC006557.

McMurtry, G. M., Campbell, J. F., Fryer, G. J. and

Fietzke, J., 2011: Uplift of Oahu, Hawaii, during the past 500 k.y. as recorded by elevated reef deposits. *Geology*, **38** (1), 27-30, DOI 10.1130/G30378.1.

Meissl, S., **Behrmann, J. H.** and Franke, C., 2011: Magnetic fabrics in Quaternary sediments, Ursa Basin, northern Gulf of Mexico record suspension transport, compaction and submarine slumping. *Marine Geology*, **286** (1-4), 51-64, DOI 10.1016/j.margeo.2011.05.007.

Meister, P., Gutjahr, M., **Frank, M.**, Bernasconi, S. M., Vasconcelos, C. and McKenzie, J. A., 2011: Dolomite formation within the methanogenic zone induced by tectonically driven fluids in the Peru accretionary prism. *Geology*, **39** (6), 563-566, DOI 10.1130/G31810.1.

Melzner, F., Stange, P., **Trübenbach, K.**, **Thomsen, J.**, Casties, I., **Panknin, U.**, Gorb, S. N. and Gutowska, M. A., 2011: Food Supply and Seawater pCO₂ Impact Calcification and Internal Shell Dissolution in the Blue Mussel *Mytilus edulis*. *PLoS ONE*, **6** (9), e24223, DOI 10.1371/journal.pone.0024223.

Meyer, A. L. and **Dierking, J.**, 2011: Elevated size and body condition and altered feeding ecology of the grouper *Cephalopholis argus* in non-native habitats. *Marine Ecology Progress Series*, **439**, 203-212, DOI 10.3354/meps09338.

Meyer, S., Caldarone, E. M., Chicharo, M. A., **Clemmesen, C.**, Faria, A. M., Faulk, C., Folkvord, A., Holt, G. J., Høie, H., Kanstinger, P., **Malzahn, A.**, Moran, D., **Petereit, C.**, Støttrup, J. G. and Peck, M. A., 2011: On the edge of death: Rates of decline and lower thresholds of biochemical condition in food-deprived fish larvae and juveniles. *Journal of Marine Systems*, **93** (May), 11-24, DOI 10.1016/j.jmarsys.2011.09.010.

Micallef, A., **Berndt, C.** and Debono, G., 2011: Fluid flow systems of the Malta Plateau, Central Mediterranean Sea. *Marine Geology*, **284** (1-4), 74-85, DOI 10.1016/j.margeo.2011.03.009.

Mironov, N. L. and **Portnyagin, M. V.**, 2011: H₂O and CO₂ in parental magmas of Kliuchevskoi volcano inferred from study of melt and fluid inclusions in olivine. *Russian Geology and Geophysics*, **52** (11), 1353-1367, DOI 10.1016/j.rgg.2011.10.007.

Mitchell, N. C., **Schmidt, M.** and Ligi, M., 2011: Comment on "Formation of Thetis Deep metal-rich sediments in the absence of brines, Red Sea" by Pierret et al. (2010). *Journal of Geochemical Exploration*, **108** (1), 112-113, DOI 10.1016/j.gexplo.2010.09.014.

Moehler, J., **Wegner, M.**, Reise, K. and Jacobsen, S., 2011: Invasion genetics of Pacific oyster *Crassostrea gigas* shaped by aquaculture stocking practices. *Journal of Sea Research*, **66** (3), 256-262, DOI 10.1016/j.seares.2011.08.004.

Mogollón, J. M., **Dale, A. W.**, L'Heureux, I. and Regnier, P., 2011: Impact of seasonal temperature and pressure changes on methane gas production, dissolution, and transport in unfractured sediments. *Journal of Geophysical Research - Biogeosciences*, **116** (G3), G03031, DOI 10.1029/2010JG001592.

Moorkamp, M., **Heincke, B.**, **Jegen, M.**, Roberts, A. W. and Hobbs, R. W., 2011: A framework for 3-D joint inversion of MT, gravity and seismic refraction data. *Geophysical Journal International*, **184** (1), 477-493, DOI 10.1111/j.1365-246X.2010.04856.x.

Mortimer, N., Palin, M., Dunlap, J. and **Hauff, F.**, 2011: Extent of the Ross Orogen in Antarctica: new data from DSDP 270 and Iselin Bank. *Antarctic Science*, **23** (3), 297-306, DOI 10.1017/S0954102010000969.

Moscoso, E., **Grevemeyer, I.**, Contreras-Reyes, E., **Flueh, E. R.**, Dzierma, Y., Rabbel, W. and Thorwart, M., 2011: Revealing the deep structure and rupture plane of the 2010 Maule, Chile earthquake (Mw=8.8) using wide angle seismic data. *Earth and Planetary Science Letters*, **307**, 147-

- 155, DOI 10.1016/j.epsl.2011.04.025.
- Mouquet, N., **Matthiessen, B.**, Miller, T. and Gonzalez, A., 2011: Extinction Debt in Source-Sink Metacommunities. *PLoS ONE*, **6** (3), e17567, DOI 10.1371/journal.pone.0017567.
- Müller, M. N.**, Kısakürek, B., Buhl, D., Gutperlet, R., **Kolevica, A.**, **Riebesell, U.**, Stoll, H. and **Eisenhauer, A.**, 2011: Response of the coccolithophores *Emiliana huxleyi* and *Coccolithus braarudii* to changing seawater Mg_{2+} and Ca_{2+} concentrations: Mg/Ca, Sr/Ca ratios and $\delta^{44/40}Ca$, $\delta^{26/24}Mg$ of coccolith calcite. *Geochimica et Cosmochimica Acta*, **75** (8), 2088-2102, DOI 10.1016/j.gca.2011.01.035.
- Nachtigall, J., Kulik, A., Helaly, S., Bull, A. T., Goodfellow, M., Asenjo, J. A., Maier, A., **Wiese, J.**, **Imhoff, J. F.**, Süßmuth, R. D. and Fiedler, H. P., 2011: Atacamycins A–C, 22-membered antitumor macrolactones produced by *Streptomyces* sp. C38*. *The Journal of Antibiotics*, **64**, 775-780, DOI 10.1038/Ja.2011.96.
- Nachtigall, J., Schneider, K., Bruntner, C., Bull, A. T., Goodfellow, M., **Zinecker, H.**, **Imhoff, J. F.**, Nicholson, G., Irran, E., Süßmuth, R. D. and Fiedler, H. P., 2011: Benzoxacystol, a benzoxazine-type enzyme inhibitor from the deep-sea strain *Streptomyces* sp. NTK 935. *The Journal of Antibiotics*, **64** (6), 453-457, DOI 10.1038/ja.2011.26.
- Naidina, O. D. and **Bauch, H. A.**, 2011: Early to middle Holocene pollen record from the Laptev Sea (Arctic Siberia). *Quaternary International*, **229** (1/2), 84-88, DOI 10.1016/j.quaint.2010.04.007.
- Nylund, G. M., **Weinberger, F.**, Rempt, M. and Pohnert, G., 2011: Metabolomic Assessment of Induced and Activated Chemical Defence in the Invasive Red Alga *Gracilaria vermiculophylla*. *PLoS ONE*, **6** (12), e29359, DOI 10.1371/journal.pone.0029359.
- Nürnberg, D.**, Dethleff, D., Tiedemann, R., Kaiser, A. and Gorbarenko, S. A., 2011: Okhotsk Sea ice coverage and Kamchatka glaciation over the last 350ka — Evidence from ice-rafted debris and planktonic $\delta^{18}O$. *Palaeogeography, Palaeoclimatology, Palaeoecology*, **310** (3-4), 191-205, DOI 10.1016/j.palaeo.2011.07.011.
- Ohlendorf, B.**, Simon, S., **Wiese, J.** and **Imhoff, J. F.**, 2011: Szentiamide, an N formylated cyclic depsipeptide from *Xenorhabdus szentirmaii* DSM 16338T. *Natural Product Communications*, **6**, 1247-1250,
- Olgun, N.**, **Duggen, S.**, **Croot, P. L.**, Delmelle, P., **Dietze, H.**, Schacht, U., Oskarsson, N., Siebe, C., Auer, A. and Garbe-Schönberg, D., 2011: Surface ocean iron fertilization: the role of subduction zone and hotspot volcanic ash and fluxes into the Pacific Ocean. *Global Biogeochemical Cycles*, **25**, GB4001, DOI 10.1029/2009GB003761.
- Pape, T., **Feseker, T.**, Kasten, S., Fischer, D. and Bohrmann, G., 2011: Distribution and abundance of gas hydrates in near-surface deposits of the Håkon Mosby Mud Volcano, SW Barents Sea. *Geochemistry Geophysics Geosystems*, **12** (9), DOI 10.1029/2011GC003575.
- Park, T., Jang, C. J., Jungclaus, J. H., Haak, H., **Park, W.** and Oh, I. S., 2011: Effects of the Changjiang river discharge on sea surface warming in the Yellow and East China Seas in summer. *Continental Shelf Research*, **31**, 15-22, DOI 10.1016/j.csr.2010.10.012.
- Patara, L.**, **Visbeck, M.**, Masina, S., **Krahmann, G.** and Vichi, M., 2011: Marine biogeochemical responses to the North Atlantic Oscillation in a coupled climate model. *Journal of Geophysical Research*, **116** (C7), C07023, DOI 10.1029/2010JC006785.
- Perez-Garcia, C., **Berndt, C.**, **Klaeschen, D.**, Mienert, J., **Haffert, L.**, Depreiter, D. and **Haackel, M.**, 2011: Linked halokinesis and mud volcanism at the Mercator Mud Volcano, Gulf of Cadiz. *Journal of Geophysical Research - Solid Earth*, **116**, B05101, DOI 10.1029/2010JB008061.
- Peters, M., Strauss, H., **Petersen, S.**, Kummer, N. A. and Thomazo, C., 2011: Hydrothermalism in the Tyrrhenian Sea: inorganic and microbial sulfur cycling as revealed by geochemical and multiple sulfur isotope data. *Chemical Geology*, **280**, 217-231, DOI 10.1016/j.chemgeo.2010.11.011.
- Pierau, R., Henrich, R., Preiß-Daimler, I., **Krastel, S.** and **Geersen, J.**, 2011: Sediment transport and turbidite architecture in the submarine Dakar Canyon off Senegal, NW-Africa. *Journal of African Earth Sciences*, **60** (3), 196-208, DOI 10.1016/j.jafrearsci.2011.02.010.
- Piontek, J.**, Händel, N., de Bodt, C., Harlay, J., Chou, L. and **Engel, A.**, 2011: The utilization of polysaccharides by heterotrophic bacterioplankton in the Bay of Biscay (North Atlantic Ocean). *Journal of Plankton Research*, doi: 10.1093/plankt/fbr069.
- Platz, T., **Münn, S.**, Walter, T. R., Procter, J. N., McGuire, P. C., Dumke, A. and Neukum, G., 2011: Vertical and lateral collapse of Tharsis Tholus, Mars. *Earth and Planetary Science Letters*, **305** (3-4), 445-455, DOI 10.1016/j.epsl.2011.03.012.
- Plechova, A. A., **Portnyagin, M. V.** and Bazanova, L. I., 2011: The Origin and Evolution of the Parental Magmas of Frontal Volcanoes in Kamchatka: Evidence from Magmatic Inclusions in Olivine from Zhupanovsky Volcano. *Geochemistry International*, **49** (8), 787-812, DOI 10.1134/S0016702911080064.
- Pohl, C., **Croot, P.**, Hennings, U., Daberkow, T., Budeus, G. and Loeff, M. R. v. d., 2011: Synoptic transects on the distribution of trace elements (Hg, Pb, Cd, Cu, Ni, Zn, Co, Mn, Fe, and Al) in surface waters of the Northern- and Southern East Atlantic. *Journal of Marine Systems*, **84** (1-2), 28-41, DOI 10.1016/j.jmarsys.2010.08.003.
- Polonia, A., Torelli, L., Mussoni, P., Gasperini, L., Artoni, A. and **Klaeschen, D.**, 2011: The Calabrian Arc subduction complex in the Ionian Sea: Regional architecture, active deformation, and seismic hazard. *Tectonics*, **30** (5), TC5018, DOI

10.1029/2010TC002821.

Polyakov, I. V., Alexeev, V. A., Ashik, I. M., Bacon, S., Beszczynska-Möller, A., Carmack, E. C., **Dmitrenko, I. A.**, Fortier, L., Gascard, J. C., Hansen, E., Hölemann, J., Ivanov, V. V., Kikuchi, T., Kirillov, S., Lenn, Y. D., McLaughlin, F. A., Piechura, J., Repina, I., Timokhov, L. A., Walczowski, W. and Woodgate, R., 2011: Fate of early 2000s Arctic warm water pulse. *Bulletin of the American Meteorological Society*, **92** (5), 561-566, DOI 10.1175/2010BAMS2921.1.

Pomella, H., Klötzli, U., Scholger, R., **Stipp, M.** and Fügenschuh, B., 2011: The Northern Giudicarie and the Meran-Mauls fault (Alps, Northern Italy) in the light of new paleomagnetic and geochronological data from boudinaged Eo-/Oligocene tonalites. *International Journal of Earth Sciences*, **100** (8), 1827-1850, DOI 10.1007/s00531-010-0612-4.

Portnyagin, M. V., Naumov, V. B., Mironov, N. L., Belousov, I. A. and Kononkova, N. N., 2011: Composition and evolution of the melts erupted in 1996 at Karymskoe Lake, Eastern Kamchatka: Evidence from inclusions in minerals. *Geochemistry International*, **49** (11), 1085-1110, DOI 10.1134/S0016702911110085.

Rabbet, W., Koulatov, I., Dinc-Akdogan, N. and Jakovlev, A., 2011: Arc parallel shear deformation and escape flow in the mantle wedge of the Central America subduction zone: Evidence from P-wave anisotropy. *Geochemistry Geophysics Geosystems*, **12**, Q05831,

Raddatz, J., López Correa, M., Rüggeberg, A., **Dullo, W. C.** and **Hansteen, T.**, 2011: Bioluminescence in deep-sea isidid gorgonians from the Cape Verde archipelago. *Coral Reefs*, **30** (3), p. 579, DOI 10.1007/s00338-011-0743-5.

Raddatz, J., **Rüggeberg, A.**, Margreth, S. and **Dullo, W. C.**, 2011: Paleoenvironmental reconstruction of Challenger Mound initiation in the Porcupine Seabight, NE Atlantic. *Marine Geology*,

282, 79-90, DOI 10.1016/j.margeo.2010.10.019. Raeymaekers, J. A. M., **Wegner, M.**, Huyse, T. and Volckaert, F. A. M., 2011: Infection dynamics of the monogenean parasite *Gyrodactylus gasterostei* on sympatric and allopatric populations of the three-spined stickleback *Gasterosteus aculeatus*. *Folia Parasitologica*, **58** (1), 27-34.

Raimund, S., **Quack, B.**, Bozec, Y., Vernet, M., Rossi, V., Garçon, V., Morel, Y. and Morin, P., 2011: Sources of short-lived bromocarbons in the Iberian upwelling system. *Biogeosciences (BG)*, **8** (6), 1551-1464, DOI 10.5194/bg-8-1551-2011.

Raitzsch, M., **Hathorne, E. C.**, Kuhnert, H., Groeneveld, J. and Bickert, T., 2011: Modern and late Pleistocene B/Ca ratios of the benthic foraminifer *Planulina wuellerstorfi* determined with laser ablation ICP-MS. *Geology*, **39** (11), 1039-1042, DOI 10.1130/G32009.1.

Raitzsch, M., Kuhnert, H., **Hathorne, E. C.**, Groeneveld, J. and Bickert, T., 2011: U/Ca in benthic foraminifers: a proxy for the deep-sea carbonate saturation. *Geochemistry Geophysics Geosystems*, **12** (6), Q06019, DOI 10.1029/2010GC003344.

Rayner, D., Hirschi, J. J. M., **Kanzow, T.**, Johns, W. E., Wright, P. G., Frajka-Williams, E., Bryden, H. L., Meinen, C. S., Baringer, M. O., Marotzke, J., Beal, L. M. and Cunningham, S. A., 2011: Monitoring the Atlantic meridional overturning circulation. *Deep-Sea Research Part II-Topical Studies in Oceanography*, **58** (17-18), 1744-1753, DOI 10.1016/j.dsr2.2010.10.056.

Regnier, P., **Dale, A. W.**, Arndt, S., LaRowe, D. E., Mogollón, J. and Van Cappellen, P., 2011: Quantitative analysis of anaerobic oxidation of methane (AOM) in marine sediments: A modeling perspective. *Earth-Science Reviews*, **106** (1-2), 105-130, DOI 10.1016/j.earscirev.2011.01.002.

Reicherter, K., Hoffmann, N., **Lindhorst, K.**, **Krastel, S.**, Fernández-Steege, T., Grützner, C. and Wiatr, T., 2011: Active basins and neotectonics: morphotectonics of the Lake Ohrid Basin

(FYROM and Albania). *Zeitschrift der Deutschen Gesellschaft für Geowissenschaften*, **162** (2), 217-234, DOI 10.1127/1860-1804/2011/0162-0217.

Reiser, S., Wuertz, S., **Schröder, J.**, Kloas, W. and **Hanel, R.**, 2011: Risks of seawater ozonation in recirculation aquaculture – Effects of oxidative stress on animal welfare of juvenile turbot (*Psetta maxima*, L.). *Aquatic Toxicology*, **105** (3-4), 508-517, DOI 10.1016/j.aquatox.2011.08.004.

Reitz, A., Pape, T., **Haeckel, M.**, **Schmidt, M.**, Berner, U., **Scholz, F.**, **Liebetrau, V.**, Aloisi, G., Weise, S. M. and **Wallmann, K.**, 2011: Sources of fluids and gases expelled at cold seeps off-shore Georgia, eastern Black Sea. *Geochimica et Cosmochimica Acta*, **75** (11), 3250-3268, DOI 10.1016/j.gca.2011.03.018.

Reusch, T. B. H. and Boström, C., 2011: Widespread genetic mosaicism in the marine angiosperm *Zostera marina* is correlated with clonal reproduction. *Evolutionary Ecology*, **25** (2), 1-15, DOI 10.1007/s10682-010-9436-8.

Rhein, M., Kieke, D., Hüttel-Kabus, S., Roessler, A., Mertens, C., Meissner, R., Klein, B., **Böning, C. W.** and Yashayaev, I., 2011: Deep water formation, the subpolar gyre, and the meridional overturning circulation in the subpolar North Atlantic. *Deep-Sea Research Part II-Topical Studies in Oceanography*, **58** (17-18), 1819-1832, DOI 10.1016/j.dsr2.2010.10.061.

Riha, S. and Eden, C., 2011: Lagrangian and Eulerian lateral diffusivities in zonal jets. *Ocean Modelling*, **39** (1-2), 114-124, DOI 10.1016/j.ocemod.2011.02.002.

Rijkenberg, M. J. A., **Langlois, R. J.**, Mills, M. M., Patey, M. D., Hill, P. G., Nielsdottir, M. C., Compton, T. J., **LaRoche, J.**, and Achterberg, E. P., 2011: Environmental forcing of nitrogen fixation in the eastern tropical and sub-tropical North Atlantic Ocean, *PLoS ONE*, **6**, 12: e28989, DOI 10.1371/journal.pone.0028989.

Rogerson, M., **Schönfeld, J.** and Leng, M. J., 2011: Qualitative and quantitative approaches in palaeohydrography: a case study from core-top parameters in the Gulf of Cadiz. *Marine Geology*, **280** (1-4), 150-167, DOI 10.1016/j.margeo.2010.12.008.

Roth, O., Scharsack, J. P., **Keller, I.** and **Reusch, T. B. H.**, 2011: Bateman's principle and immunity in a sex-role reversed pipefish. *Journal of Evolutionary Biology*, **24** (7), 1410-1420, DOI 10.1111/j.1420-9101.2011.02273.x.

Roux, E., **Moorkamp, M.**, Jones, A. G., Bischoff, M., Endrun, B., Lebedev, S. and Meier, T., 2011: Joint inversion of long-period magnetotelluric data and surface-wave dispersion curves for anisotropic structure: Application to data from Central Germany. *Geophysical Research Letters*, **38** (5), L05304, DOI 10.1029/2010GL046358.

Ruhl, H. A., André, M., Beranzoli, L., Çağatay, M. N., Colaço, A., Cannat, M., Dañobeitia, J. J., Favali, P., Géli, L., Gillooly, M., Greinert, J., Hall, P. O. J., Huber, R., **Karstensen, J.**, Lampitt, R. S., Larkin, K. E., Lykousis, V., Mienert, J., Miguel Miranda, J., Person, R., Priede, I. G., Puillat, I., Thomsen, L. and Waldmann, C., 2011: Societal need for improved understanding of climate change, anthropogenic impacts, and geo-hazard warning drive development of ocean observatories in European Seas. *Progress in Oceanography*, **91** (1), 1-33, DOI 10.1016/j.pocan.2011.05.001.

Rüggeberg, A., **Flögel, S.**, **Dullo, W. C.**, **Hissmann, K.** and **Freiwald, A.**, 2011: Water mass characteristics and sill dynamics in a subpolar cold-water coral reef setting at Stjærnsund, northern Norway. *Marine Geology*, **282** (1/2), 5-12, DOI 10.1016/j.margeo.2010.05.009.

Saha, M., Rempt, M., **Grosser, K.**, Pohnert, G. and **Weinberger, F.**, 2011: Surface-associated fucoxanthin mediates settlement of bacterial epiphytes on the rockweed *Fucus vesiculosus*. *Biofouling*, **27** (4), 423-433, DOI

10.1080/08927014.2011.580841.

Samonte-Padilla, I. E., **Eizaguirre, C.**, Scharsack, J. P., Lenz, T. L. and Milinski, M., 2011: Induction of diploid gynogenesis in an evolutionary model organism, the three-spined stickleback (*Gasterosteus aculeatus*). *BMC Developmental Biology*, **11** (1), 55, DOI 10.1186/1471-213X-11-55.

Sareyka, J., Kraufvelin, P., **Lenz, M.**, Lindström, M., Tollrian, R. and **Wahl, M.**, 2011: Differences in stress tolerance and brood size between a non-indigenous and an indigenous gammarid in the northern Baltic Sea. *Marine Biology*, **158**, 2001-2008, DOI 10.1007/s00227-011-1708-5.

Sarkar, S., **Berndt, C.**, Chabert, A., Masson, D. G., Minshull, T. A. and Westbrook, G. K., 2011: Switching of a paleo-ice stream in northwest Svalbard. *Quaternary Science Reviews*, **30** (13-14), 1710-1725, DOI 10.1016/j.quascirev.2011.03.013.

Sawall, Y., Teichberg, M. C., Seemann, J., Litaay, M., Jompa, J. and Richter, C., 2011: Nutritional status and metabolism of the coral *Stylophora subseriata* along a eutrophication gradient in Spermonde Archipelago (Indonesia). *Coral Reefs*, **30** (3), 841-853, DOI 10.1007/s00338-011-0764-0.

Schaber, M., **Haslob, H.**, Huwer, B., **Harjes, A.**, **Hinrichsen, H. H.**, Koster, F. W., Storr-Paulsen, M., Schmidt, J. O. and Voss, R., 2011: The invasive ctenophore *Mnemiopsis leidyi* in the central Baltic Sea: seasonal phenology and hydrographic influence on spatio-temporal distribution patterns. *Journal of Plankton Research*, **33** (7), 1053-1065, DOI 10.1093/plankt/fbq167.

Schaber, M., **Haslob, H.**, Huwer, B., **Harjes, A.**, **Hinrichsen, H. H.**, Storr-Paulsen, M., Schmidt, J. O., Voss, R., Neumann, V. and Köster, F. W., 2011: Spatio-temporal overlap of the alien invasive ctenophore *Mnemiopsis leidyi* and ichthyoplankton in the Bornholm Basin (Baltic Sea). *Biological Invasions*, **13** (12), 2647-2660, DOI 10.1007/s10530-011-9936-7.

Schaber, M., **Marohn, L.**, **Petereit, C.**, **Schröder, J.**, **Zumholz, K.** and **Hanel, R.**, 2011: Newcomers in the Baltic Sea: an attempt to trace the origins and whereabouts of thicklip grey mullet *Chelon labrosus*. *Fisheries Science*, **77**, 757-764, DOI 10.1007/s12562-011-0384-1.

Schauer, R., Røy, H., **Augustin, N.**, Gennerich, H. H., Peters, M., Wenzhoefer, F., Amann, R. and Meyerdierks, A., 2011: Bacterial sulfur cycling shapes microbial communities in surface sediments of an ultramafic hydrothermal vent field. *Environmental Microbiology*, **13** (10), 2633-2648, DOI 10.1111/j.1462-2920.2011.02530.x.

Schiebel, R., Brupbacher, U., **Schmidtke, S.**, Nausch, G., Wanek, J. J. and Thierstein, H. R., 2011: Spring coccolithophore production and dispersion in the temperate eastern North Atlantic Ocean. *Journal of Geophysical Research*, **116** (C8), DOI 10.1029/2010JC006841.

Schmale, O., **Haeckel, M.** and **McGinnis, D.**, 2011: Response of the Black Sea methane budget to massive short-term submarine inputs of methane. *Biogeosciences (BG)*, **8** (4), 911-918, DOI 10.5194/bg-8-911-2011.

Schneemann, I., **Wiese, J.**, **Kunz, A. L.** and **Imhoff, J. F.**, 2011: Genetic Approach for the Fast Discovery of Phenazine Producing Bacteria. *Marine Drugs*, **9** (5), 772-789, DOI 10.3390/md9050772.

Schneider von Deimling, J., Rehder, G., Greinert, J., **McGinnis, D.**, Boetius, A. and **Linke, P.**, 2011: Quantification of seep-related methane gas emissions at Tommeliten, North Sea. *Continental Shelf Research*, **31** (7/8), 867-878, DOI 10.1016/j.csr.2011.02.012.

Scholz, F., **Hensen, C.**, **Noffke, A.**, Rohde, A., **Liebetrau, V.** and **Wallmann, K.**, 2011: Early diagenesis of redox-sensitive trace metals in the Peru upwelling area – Response to ENSO-related oxygen fluctuations in the water column. *Geochimica et Cosmochimica Acta*, **75** (22), 7257-

7276, DOI 10.1016/j.gca.2011.08.007.

Schröder, J., Croot, P., Von Dewitz, B., Waller, U. and **Hanel, R.**, 2011: Potential and limitations of ozone for the removal of ammonia, nitrite, and yellow substances in marine recirculating aquaculture systems. *Aquacultural Engineering*, **45** (1), 35-41, DOI 10.1016/j.aquaeng.2011.06.001.

Schröder, J., Reiser, S., Croot, P. and Hanel, R., 2011: A comparative study on the removability of different ozone-produced oxidants by activated carbon filtration. *Ozone: Science & Engineering*, **33** (3), 224-231, DOI 10.1080/01919512.2011.554277.

Schulz, D., Beese, P., Ohlendorf, B., Erhard, A., Zinecker, H., Dorador, C. and Imhoff, J. F., 2011: Abenquines A-D: aminoquinone derivatives produced by *Streptomyces* sp. strain DB634. *The Journal of Antibiotics*, **64**, 763-768, DOI 10.1038/ja.2011.87.

Schulz, D., Ohlendorf, B., Zinecker, H., Schmaljohann, R. and Imhoff, J. F., 2011: Eutypoids B-E Produced by *aPenicillium* sp. Strain from the North Sea. *Journal of Natural Products*, **74** (1), 99-101, DOI 10.1021/np100633k.

Schwarzkopf, F. and Böning, C. W., 2011: Contribution of Pacific wind stress to multi-decadal variations in upper-ocean heat content and sea level in the tropical south Indian Ocean. *Geophysical Research Letters*, **38**, L12602, DOI 10.1029/2011GL047651.

Schweizer, M., **Polovodova, I., Nikulina, A. and Schönfeld, J.**, 2011: Molecular identification of Ammonia and Elphidium species (*Foraminifera*, *Rotaliida*) from the Kiel Fjord (SW Baltic Sea) with rDNA sequences. *Helgoland Marine Research*, **65**, 1-10, DOI 10.1007/s10152-010-0194-3.

Schäfer, P., Fortunato, H., Bader, B., **Liebetrau, V., Bauch, T.** and Reijmer, J. J. G., 2011: Growth rates and carbonate production by coralline red algae in upwelling and non-upwelling settings along the pacific coast of Panama. *Palaos*, **26**

(7), 420-432, DOI 10.2110/palo.2010.p10-138r.

Schönfeld, J., Dullo, W. C., Pfannkuche, O., Freiwald, A., Rüggeberg, A., Schmidt, S. and Weston, J., 2011: Recent benthic foraminiferal assemblages from cold-water coral mounds in the Porcupine Seabight. *Facies*, **57** (2), 187-213, DOI 10.1007/s10347-010-0234-0.

Schwarzkopf, F.U. and Böning, C.W., 2011: Contribution of Pacific wind stress to multi-decadal variations in upper-ocean heat content and sea level in the tropical south Indian Ocean. *Geophys. Res. Lett.*, **38**, L12602, DOI 10.1029/2011GL047651.

Send, U., Lankhorst, M. and **Kanzow, T.**, 2011: Observation of decadal change in the Atlantic meridional overturning circulation using 10 years of continuous transport data. *Geophysical Research Letters*, **38** (24), DOI 10.1029/2011GL049801.

Shadwick, E. H., Thomas, H., Gratton, Y., Leong, D., Moore, S. A., Papakyriakou, T. and **Prowe, A. E. F.**, 2011: Export of Pacific carbon through the Arctic Archipelago to the North Atlantic. *Continental Shelf Research*, **31** (7-8), 806-816, DOI 10.1016/j.csr.2011.01.014.

Shama, L. N. S., Camper-Paz, M., **Wegner, M.**, De Block, M. and SToks, R., 2011: Latitudinal and voltinism compensation shape thermal reaction norms for growth rate. *Molecular Ecology*, **20** (14), 2929-2941, DOI 10.1111/j.1365-294X.2011.05156.x.

Shama, L. N. S., Kubow, K. B., Jokela, J. and Robinson, C. T., 2011: Bottlenecks drive temporal and spatial genetic changes in alpine caddisfly metapopulations. *BMC Evolutionary Biology*, **11** (1), p. 278, DOI 10.1186/1471-2148-11-278.

Shulgin, A., Kopp, H., Mueller, C., Planert, L., Lueschen, E., Flueh, E. R. and Djajadihardja, Y., 2011: Structural architecture of oceanic plateau subduction offshore Eastern Java and the potential implications for geohazards. *Geophysical Journal International*, **184**, 12-28, DOI 10.1111/j.1365-

246X.2010.04834.x.

Smirnov, A., Holben, B. N., Giles, D. M., Slutsker, I., O'Neill, N. T., Eck, T. F., Macke, A., **Croot, P.**, Courcoux, Y., Sakerin, S. M., Smyth, T. J., Zielinski, T., Zibordi, G., Goes, J. I., Harvey, M. J., Quinn, P. K., Nelson, N. B., Radionov, V. F., Duarte, C. M., Losno, R., Sciare, J., Voss, K. J., Kinne, S., Nalli, N. R., Joseph, E., Krishna Moorthy, K., Covert, D. S., Gulev, S. K., Milinevsky, G., Larouche, P., Belanger, S., Horne, E., Chin, M., Remer, L. A., Kahn, R. A., Reid, J. S., Schulz, M., Heald, C. L., Zhang, J., Lapina, K., Kleidman, R. G., Griesfeller, J., Gaitley, B. J., Tan, Q. and Diehl, T. L., 2011: Maritime aerosol network as a component of AERONET – first results and comparison with global aerosol models and satellite retrievals. *Atmospheric Measurement Techniques*, **4** (3), 583-597, DOI 10.5194/amt-4-583-2011.

Smith, S. L., **Pahlow, M.**, Merico, A. and Wirtz, K. W., 2011: Optimality-based modeling of planktonic organisms. *Limnology and Oceanography*, **56** (6), 2080-2094, DOI 10.4319/lo.2011.56.6.2080.

Sommer, U. and Lewandowska, A., 2011: Climate change and the phytoplankton spring bloom: warming and overwintering zooplankton have similar effects on phytoplankton. *Global Change Biology*, **17** (1), 154-162, DOI 10.1111/j.1365-2486.2010.02182.x.

Speckbacher, R., Behrmann, J. H., Nagel, T. J., Stipp, M. and Devey, C. W., 2011: Splitting a continent: insights from submarine high resolution mapping of the Moresby Seamount detachment, offshore Papua New Guinea. *Geology*, **39** (7), 651-654, DOI 10.1130/G31931.1.

Spielhagen, R. F., Werner, K., Sørensen, S. A., Zamelczyk, K., Kandiano, E., Budeus, G., Husum, K., Marchitto, T. M. and Hald, M., 2011: Enhanced modern heat Transfer to the Arctic by warm Atlantic water. *Science*, **331** (6016), 450-453, DOI 10.1126/science.1197397.

Stepputis, D., **Hinrichsen, H. H.**, Böttcher, U.,

- Götze, E. and Mohrholz, V., 2011: An example of meso-scale hydrographic features in the central Baltic Sea and their influence on the distribution and vertical migration of sprat, *Sprattus sprattus balticus* (Schn.). *Fisheries Oceanography*, **20** (1), 82-88, DOI 10.1111/j.1365-2419.2010.00567.x.
- Stevenson, T. C., Tissot, B. N. and **Dierking, J.**, 2011: Fisher behavior influences catch productivity and selectivity in West Hawaii's aquarium fishery. *ICES Journal of Marine Science*, **68** (5), 813-822, DOI 10.1093/icesjms/fsr020.
- Stroncik, N. A. and **Devey, C. W.**, 2011: Recycled gabbro signature in hotspot magmas unveiled by plume-ridge interactions. *Nature Geoscience*, **4**, 393-397, DOI 10.1038/NCEO1121.
- Stumpf, R., Frank, M., Schönfeld, J. and Hailey, B. A.**, 2011: Climatically driven changes in sediment supply on the SW Iberian shelf since the Last Glacial Maximum. *Earth and Planetary Science Letters*, **312** (1-2), 80-90, DOI 10.1016/j.epsl.2011.10.002.
- Stumpp, M., Dupont, S., Thorndyke, M. C. and Melzner, F.**, 2011: CO₂ induced seawater acidification impacts sea urchin larval development II: Gene expression patterns in *pluteus* larvae. *Comparative Biochemistry and Physiology A - Molecular and Integrative Physiology*, **160** (3), 320-330, DOI 10.1016/j.cbpa.2011.06.023.
- Stumpp, M., Wren, J., Melzner, F., Thorndyke, M. C. and Dupont, S. T.**, 2011: CO₂ induced seawater acidification impacts sea urchin larval development I: Elevated metabolic rates decrease scope for growth and induce developmental delay. *Comparative Biochemistry and Physiology A - Molecular and Integrative Physiology*, **160** (3), 331-340, DOI 10.1016/j.cbpa.2011.06.022.
- Suffrian, K., **Schulz, K.**, Gutowska, M. A., **Riebesell, U.** and Bleich, M., 2011: Cellular pH measurements in *Emiliania huxleyi* reveal pronounced membrane proton permeability. *New Phytologist*, **190** (3), 595-608, DOI 10.1111/j.1469-8137.2010.03633.x.
- Swidinsky, A.** and Edwards, R. N., 2011: Joint inversion of navigation and resistivity using a fixed transmitter and a towed receiver array: a transient marine CSEM model study. *Geophysical Journal International*, **186**, 987-996.
- Tank, M., Blümel, M. and Imhoff, J. F.**, 2011: Communities of purple sulfur bacteria in a Baltic Sea coastal lagoon analyzed by pufLM gene libraries and the impact of temperature and NaCl concentration in experimental enrichment cultures. *FEMS Microbiology Ecology*, **78** (3), 428-438, DOI 10.1111/j.1574-6941.2011.01175.x.
- Taucher, J. and Oschlies, A.**, 2011: Can we predict the direction of marine primary production change under global warming? *Geophysical Research Letters*, **38**, L02603, DOI 10.1029/2010GL04534.
- Theissen-Krah, S., Iyer, K., Rüpke, L. and Morgan, J. P.**, 2011: Coupled mechanical and hydrothermal modeling of crustal accretion at intermediate to fast spreading ridges. *Earth and Planetary Science Letters*, **311** (3-4), 275-286, DOI 10.1016/j.epsl.2011.09.018.
- Thiede, J.**, Jessen, C., Knutz, P., Kuijpers, A., Mikkelsen, N., Nørgaard-Pedersen, N. and **Spielhagen, R. F.**, 2011: Million years of Greenland Ice Sheet history recorded in ocean sediments. *Polarforschung*, **80** (3), 141-149.
- Thomas, H., Fransson, A., Papakyriakou, T., Sternberg, E., Miller, L. A., Tremblay, J. E., Monnin, C., Shadwick, E. H., Dehairs, F., Lansard, B., Mucci, A., Navez, J., Gratton, Y., **Prowe, F.** and Chierici, M., 2011: Barium and Carbon fluxes in the Canadian Arctic Archipelago. *Journal of Geophysical Research*, **116**, C00G08, DOI 10.1029/2011JC007120.
- Timm, C., Hoernle, K., Werner, R., Hauff, F., van den Bogaard, P., Michael, P., Coffin, M. and Koppers, A.**, 2011: Age and geochemistry of the oceanic Manihiki Plateau, SW Pacific: new evidence for a plume origin. *Earth and Planetary Science Letters*, **304** (1-2), 135-146, DOI 10.1016/j.epsl.2011.01.025.
- Toohy, M., Krüger, K., Niemeier, U. and Timmreck, C.**, 2011: The influence of eruption season on the global aerosol evolution and radiative impact of tropical volcanic eruptions. *Atmospheric Chemistry and Physics*, **11**, 12351-12367, DOI 10.5194/acp-11-12351-2011.
- Torge, A., Macke, A., Heinold, B. and Wauer, J.**, 2011: Solar radiative transfer simulations in Saharan dust plumes: particle shapes and 3-D effect. *Tellus Series B: Chemical and physical Meteorology*, **63** (4), 770-780, DOI 10.1111/j.1600-0889.2011.00560.x.
- Tozuka, T., Doi, T., Miyasaka, T., **Keenlyside, N. S.** and Yamagata, T., 2011: Key factors in simulating the equatorial Atlantic zonal sea surface temperature gradient in a coupled general circulation model. *Journal of Geophysical Research*, **116** (C6), DOI 10.1029/2010JC006717.
- Treude, T., Kiel, S., Linke, P., Peckmann, J. and Goedert, J. L.**, 2011: Elasmobranch egg capsules associated with modern and ancient cold seeps: a nursery for marine deep-water predators. *Marine Ecology Progress Series*, **437**, 175-181, DOI 10.3354/meps09305.
- Tseng, Y. C.**, Chen, R. D., Lucassen, M., Schmidt, M. M., Dringen, R., Abele, D. and Hwang, P. P., 2011: Exploring Uncoupling Proteins and Antioxidant Mechanisms under Acute Cold Exposure in Brains of Fish. *PLoS ONE*, **6** (3), e18180, DOI 10.1371/journal.pone.0018180.
- Uenzelmann-Neben, G., Watkeys, M. K., Kretzinger, W., **Frank, M. and Heuer, L.**, 2011: Palaeoceanographic interpretation of a seismic profile from the southern Mozambique Ridge. *South African Journal of Geology*, **114**, 449-458, DOI 10.2113/gssajg.114.3-4.449.
- Ullemeyer, K., Nikolayev, D. I., Christensen, N. I. and **Behrmann, J. H.**, 2011: Evaluation of in-

trinsic velocity-pressure trends from low-pressure P-wave velocity measurements in rocks containing microcracks. *Geophysical Journal International*, **185** (3), 1312-1320, DOI 10.1111/j.1365-246X.2011.05008.x.

Van Nieuwenhove, N., Bauch, H. A., Eynaud, F., **Kandiano, E.**, Cortijo, E. and Turon, J. L., 2011: Evidence for delayed poleward expansion of North Atlantic surface waters during the last interglacial (MIS 5e). *Quaternary Science Reviews*, **30** (7-8), 934-946, DOI 10.1016/j.quascirev.2011.01.013.

Vanneste, H., Kelly-Gerreyn, B. A., Connelly, D. P., James, R. H., **Haeckel, M.**, Fisher, R. E., Heeschen, K. and Mills, R. A., 2011: Spatial variation in fluid flow and geochemical fluxes across the sediment-seawater interface at the Carlos Ribeiro mud volcano (Gulf of Cadiz). *Geochimica et Cosmochimica Acta*, **75** (4), 1124-1144, DOI 10.1016/j.gca.2010.11.017.

Veneklaas, R. M., **Bockelmann, A., Reusch, T. B. H.** and Bakker, J. P., 2011: Effect of grazing and mowing on the clonal structure of *Elytrigia atherica*: a long-term study of abandoned and managed sites. *Preslia*, **83** (3), 455-470,

Vichi, M., Manzini, E., Fogli, P. G., Alessandri, A., **Patara, L.**, Scoccimarro, E., Masina, S. and Navarra, A., 2011: Global and regional ocean carbon uptake and climate change: sensitivity to a substantial mitigation scenario. *Climate Dynamics*, **37** (9-10), 1929-1947, DOI 10.1007/s00382-011-1079-0.

Vignon, M. and **Dierking, J.**, 2011: Prey regurgitation and stomach vacuity among groupers and snappers. *Environmental Biology of Fishes*, **90** (4), 361-366,

Voss, R., **Hinrichsen, H. H.**, Quaas, M. F., Schmidt, J. O. and Tahvonen, O., 2011: Temperature change and Baltic sprat: from observations to ecological-economic modelling. *ICES Journal of Marine Science*, **68** (6), 1244-1256, DOI

10.1093/icesjms/fsr063.

Voss, R., **Hinrichsen, H. H.**, Stepputtis, D., Bernreuther, M., Huwer, B., Neumann, V. and Schmidt, J. O., 2011: Egg mortality: predation and hydrography in the central Baltic. *ICES Journal of Marine Science*, **68** (7), 1379-1390, DOI 10.1093/icesjms/fsr061.

Völker, D., Grevemeyer, I., Stipp, M., Wang, K. and He, J., 2011: Thermal control of the seismogenic zone of southern central Chile. *Journal of Geophysical Research - Solid Earth*, **116** (B10), B10305, DOI 10.1029/2011JB008247.

Völker, D., Kutterolf, S. and Wehrmann, H., 2011: Comparative mass balance of volcanic edifices at the Southern Volcanic Zone of the Andes between 33°S and 46°S. *Journal of Volcanology and Geothermal Research*, **205**, 114-129, DOI 10.1016/j.jvolgeores.2011.03.011.

Völker, D., Scholz, F. and Geersen, J., 2011: Analysis of submarine landsliding in the rupture area of the 27 February 2010 Maule earthquake, Central Chile. *Marine Geology*, **288** (1-4), 79-89, DOI 10.1016/j.margeo.2011.08.003.

Wade, M., Caniaux, G., duPenhoat, Y., **Dengler, M.**, Giordani, H. and **Hummels, R.**, 2011: A one-dimensional modeling study of the diurnal cycle in the equatorial Atlantic at the PIRATA buoys during the EGEE-3 campaign. *Ocean Dynamics*, **61**, 1-20, DOI 10.1007/s10236-010-0337-8.

Wahl, M., Jormalainen, V., Eriksson, B. K., Coyer, J. A., Molis, M., Schubert, H., Dethier, M., Karez, R., **Kruse, I., Lenz, M.**, Pearson, G., Rohde, S., Wikström, S. A. and Olsen, J. L., 2011: Stress Ecology in Fucus: Abiotic, Biotic and Genetic Interactions. *Advances in Marine Biology*, **59**, 37-105, DOI 10.1016/B978-0-12-385536-7.00002-9.

Wahl, M., Link, H., **Alexandridis, N.**, Thomason, J. C., Cifuentes, M., Costello, M. J., da Gama, B. A. P., Hillock, K., Hobday, A. J., Kaufmann, M. J., Keller, S., Kraufvelin, P., Krüger, I., Lauter-

bach, L., Antunes, B. L., Molis, M., Nakaoka, M., Nyström, J., bin Radzi, Z., Stockhausen, B., Thiel, M., Vance, T., Weseloh, A., Whittle, M., Wiesmann, L., Wunderer, L., Yamakita, T. and Lenz, M., 2011: Re-Structuring of Marine Communities Exposed to Environmental Change: A Global Study on the Interactive Effects of Species and Functional Richness. *PLoS ONE*, **6** (5), e19514, DOI 10.1371/journal.pone.0019514.

Wanamaker, A. D. J., **Hetzinger, S.** and Halfar, J., 2011: Reconstructing mid- to high-latitude marine climate and ocean variability using bivalves, coralline algae, and marine sediment cores from the Northern Hemisphere. *Palaeogeography Palaeoclimatology Palaeoecology*, **302** (1-2), 1-9, DOI 10.1016/j.palaeo.2010.12.024.

Wehrmann, H. and Dzierma, Y., 2011: Applicability of statistical eruption analysis to the geologic record of Villarrica and Lanin volcanoes, Southern Volcanic Zone, Chile. *Journal of Volcanology and Geothermal Research*, **200**, 99-115, DOI 10.1016/j.jvolgeores.2010.11.009.

Wehrmann, H., Hoernle, K., Portnyagin, M., Wiedenbeck, M. and **Heydolph, K.**, 2011: Volcanic CO₂ output at the Central American subduction zone inferred from melt inclusions in olivine crystals from mafic tephra. *Geochemistry, Geophysics, Geosystems*, **12**, Q06003, DOI 10.1029/2010GC003412.

Weinberger, F., Lion, U., Delage, L., Kloareg, B., Potin, P., Beltrán, J., Flores, V., Faugeron, S., Correa, J. and Pohnert, G., 2011: Up-Regulation of Lipxygenase, Phospholipase, and Oxylipin-Production in the Induced Chemical Defense of the Red Alga Gracilaria chilensis against Epiphytes. *Journal of Chemical Ecology*, **37** (7), 677-686, DOI 10.1007/s10886-011-9981-9.

Weinberger, F., Rohde, S., Oschmann, Y., Shahnaz, L., Dobretsov, S. and Wahl, M., 2011: Effects of limitation stress and disruptive stress on induced antigrazing defense in the bladder

wrack *Fucus vesiculosus*. *Marine Ecology Progress Series*, **427**, 83-94,

Weldeab, S., **Frank, M., Stichel, T., Haley, B.** and Sangen, M., 2011: Spatio-temporal evolution of the West African monsoon during the last deglaciation. *Geophysical Research Letters*, **38** (13), L13703, DOI 10.1029/2011GL047805.

Werner, K., Spielhagen, R. F., Bauch, D., Hass, H. C., **Kandiano, E.** and Zamelczyk, K., 2011: Atlantic Water advection to the eastern Fram Strait – multiproxy evidence for late Holocene variability. *Palaeogeography Palaeoclimatology Palaeoecology*, **308** (3-4), 264-276, DOI 10.1016/j.palaeo.2011.05.030.

Wiese, J., Ohlendorf, B., Blümel, M., Schmaljohann, R. and Imhoff, J. F., 2011: Phylogenetic Identification of Fungi Isolated from the Marine Sponge *Tethya aurantium* and Identification of their Secondary Metabolites. *Marine Drugs*, **9** (4), 561-585.

Wilken, S., Hoffmann, B., Hersch, N., Kirchgessner, N., Dieluweit, S., Rubner, W., **Hoffmann, L.,** Merkel, R. and **Peeken, I.**, 2011: Diatom frustules show increased mechanical strength and altered valve morphology under iron limitation. *Limnology and Oceanography*, **56** (4), 1399-1410, DOI 10.4319/lo.2011.56.4.1399.

Williams, B., Halfar, J., Steneck, R. S., Wortmann, U. G., **Hetzinger, S.,** Adey, W., Lebednik, P. and Joachimski, M., 2011: Twentieth century $\delta^{13}\text{C}$ variability in surface water dissolved inorganic carbon recorded by coralline algae in the northern North Pacific Ocean and the Bering Sea. *Biogeosciences (BG)*, **8** (1), 165-174, DOI 10.5194/bg-8-165-2011.

Winder, M. and Jassby, A. D., 2011: Shifts in Zooplankton Community Structure: Implications for Food Web Processes in the Upper San Francisco Estuary. *Estuaries and Coasts*, **34** (4), 675-690, DOI 10.1007/s12237-010-9342-x.

Winder, M., Jassby, A. D. and Mac Nally, R.,

2011: Synergies between climate anomalies and hydrological modifications facilitate estuarine biotic invasions. *Ecology Letters*, **14**, 749-757, DOI 10.1111/j.1461-0248.2011.01635.x.

Winters, G., Nelle, P., Fricke, B., Rauch, G. and **Reusch, T. B. H.**, 2011: Effects of a simulated heat wave on photophysiology and gene expression of high- and low-latitude populations of *Zostera marina*. *Marine Ecology Progress Series*, **435**, 83-95, DOI 10.3354/meps09213.

Wissler, L., Codoñer, F. M., Gu, J., **Reusch, T. B. H.**, Olsen, J. L., Procaccini, G. and Bornberg-Bauer, E., 2011: Back to the sea twice: identifying candidate plant genes for molecular evolution to marine life. *BMC Evolutionary Biology*, **11** (1), 8, DOI 10.1186/1471-2148-11-8.

Wohlers-Zöllner, J., **Breithaupt, P.,** Walther, K., Jürgens, K. and **Riebesell, U.**, 2011: Temperature and nutrient stoichiometry interactively modulate organic matter cycling in a pelagic algal-bacterial community. *Limnology and Oceanography*, **56** (2), 599-610, DOI 10.4319/lo.2011.56.2.0599.

Wombacher, F., Eisenhauer, A., Böhm, F., Gussone, N., Regenberg, M., Dullo, W. C. and **Rüggeberg, A.**, 2011: Magnesium stable isotope fractionation in marine biogenic calcite and aragonite. *Geochimica et Cosmochimica Acta*, **75** (19), 5797-5818, DOI 10.1016/j.gca.2011.07.017.

Worzewski, T., Jegen, M., Kopp, H., Brasse, H. and Taylor, W. T., 2011: Magnetotelluric image of the fluid cycle in the Costa Rican subduction zone. *Nature Geoscience*, **4**, 108-111, DOI 10.1038/ngeo1041.

Wu, L., Jing, Z., Riser, S. and **Visbeck, M.**, 2011: Seasonal and spatial variations of Southern Ocean diapycnal mixing from Argo profiling floats. *Nature Geoscience*, **4** (6), 363-366, DOI 10.1038/ngeo1156.

Yeh, S. W., Kirtman, B. P., Kug, J. S., **Park, W.** and **Latif, M.**, 2011: Natural variability of the central Pacific El Niño event on multi-centennial

timescales. *Geophysical Research Letters*, **38**, L02704, DOI 10.1029/2010GL045886.

Zamora, L., Prospero, J. M. and Hansell, D. A., 2011: Organic nitrogen in aerosols and precipitation at Barbados and Miami: Implications regarding sources, transport and deposition to the western subtropical North Atlantic. *Journal of Geophysical Research*, **116** (D20), DOI 10.1029/2011JD015660.

Zielinski, O., Voß, D., Saworski, B., **Fiedler, B.** and **Körtzinger, A.**, 2011: Computation of nitrate concentrations in turbid coastal waters using an in situ ultraviolet spectrophotometer. *Journal of Sea Research*, **65** (4), 456-460, DOI 10.1016/j.seares.2011.04.002.

5.5 Other Publications

Arndt, C., 2011: Harpacticoid copepods: an alternative to other live feeds?. *Hatchery International*, 22-23.

Bange, H., Hansen, H. P., Malien, F., Laß, K., Dale, A., Karstensen, J., Petereit, C. and Friedrichs, G., 2011: Boknis Eck Time Series Station (SW Baltic Sea): Measurements from 1957 to 2010. *LOICZ Inprint*, **2011** (1), 16-22.

Brotz, L., **Lebrato, M.**, Robinson, K. L., Sexton, M., Sweetman, A. K., Pitt, K. and Condon, R., 2011: Implications of increased carbon supply for the global expansion of jellyfish blooms. *Limnology and Oceanography Bulletin*, **20**, 38-39.

Caramanna, G., **Fietzek, P.** and Maroto-Valer, M., 2011: Monitoring techniques of a natural analogue for sub-seabed CO₂ leakages. *Energy Procedia*, **4**, 3262-3268, DOI 10.1016/j.egypro.2011.02.245.

Carstensen, D., 2011: Wege zu einer nachhaltigeren Fischerei in den Natura 2000-Gebieten der deutschen AWZ von Nord- und Ostsee. *Natur und Landschaft*, **86** (9/10), 442-446.

Fiedler, B., Fietzek, P. and Körtzinger, A., 2011: When Chemical Oceanographers go robotic – first high-quality CO₂ measurements from profiling float. *IFM-GEOMAR Annual Report 2010*

Fietzek, P., Kramer, S. and Esser, D., 2011: Measuring dissolved carbon dioxide and methane on modern platforms. *International Ocean Systems*, **15** (2), 10-12.

Fietzek, P., Kramer, S. and Esser, D., 2011: Deployments of the HydroC (CO₂/CH₄) on stationary and mobile platforms Merging the trends in the field of platform and sensor development. In: Oceans 2011. IEEXplore, 1-9. ISBN 978-1-4577-1427-6

Flögel, S. and **Dullo, W. C.**, 2011: High resolution water mass measurements around cold-water corals: a comparative test study between repeated Conductivity-Temperature-Depth (CTD) casts and continuous data acquisition of bottom

waters from the West Florida Slope, Gulf of Mexico. *Annalen des Naturhistorischen Museums in Wien, Serie A*, **113**, 209-224.

Frank, M., 2011: Geochemical proxies of ocean circulation and weathering inputs: Radiogenic isotopes of Nd, Pb, Sr, Hf, and Os. *IOP Conference Series: Earth and Environmental Science*, **14**, 012010, DOI 10.1088/1755-1315/14/1/012010.

Freundt, A., 2011: Vulkanische Experimente. *Geographische Rundschau*, **63** (6), 52-58.

Froese, R., 2011: Save the fish: attempts to change European fisheries management. *IFM-GEOMAR Annual Report*, **2010**, 30-31.

Getzlaff, K., Lehmann, A. and **Harlaß, J.**, 2011: The response of the general circulation of the Baltic Sea to climate variability. *BALTEX Newsletter*, **14**, 13-16.

Haeckel, M., 2011: Natürliche Gashydrate – potenter Energieträger und Option zur CO₂-Speicherung. *Energie-, Wasser-Praxis*, **62** (12), 104-109.

Hegglin, M. and **Tegtmeier, S.**, 2011: The SPARC Data Initiative. *Sparc Newsletter*, **36**, 22-23.

Heinemann, A., Hiebenthal, C., Fietzke, J., Eisenhauer, A. and **Wahl, M.**, 2011: Correction to "Disentangling the biological and environmental control of M. edulis shell chemistry". *Geochemistry Geophysics Geosystems*, **12** (5), DOI 10.1029/2011GC003673.

Horna, F., Krentz, O., Buske, S., **Schönfeld, J.** and Sonnabend, L., 2011: Die Mergel von Börnersdorf (Osterzgebirge) – Stratigraphie, Tektonik und Geophysik eines verdeckten Oberkreidereklikte. *Freiberger Forschungshefte: C, Geowissenschaften*, **540**, 65-78.

Keenlyside, N. S., 2011: Commentary on „Validation and forecasting accuracy in models of climate change“. *International Journal of Forecasting*, **27** (4), 1000-1003, DOI 10.1016/j.ijforecast.2011.07.002.

Körtzinger, A. and **Zenk, C.**, 2011: Forschun-

gsstandort Kap Verde – Ein faszinierendes Labor für Meeres- und Atmosphärenforscher im tropischen Atlantik. Broschüre, 32 S.

Latif, M., 2011: Die Energiesysteme der Zukunft. *Schindler Magazin*, 6-7.

Latif, M., 2011: Katastrophen allenthalben und was wir daraus lernen können. *Siv. News*, **3**, 22-23.

Latif, M., 2011: Klimawandel: eine Frage der internationalen Gerechtigkeit. *UNESCO heute*, **2**, 20-22.

Latif, M., 2011: Kohlendioxid – der Stoff, aus dem die globale Erwärmung ist. *Sinnstifter*, 18-31.

Latif, M., 2011: Strategie für ein Leben im Klimawandel. *CHANC/GE – 100 % Klimaschutz kommunal*, **2**, 8-9.

Latif, M., 2011: Warum viele offizielle Statistiken über den Ausstoß von Klimagas die Tatsachen auf den Kopf stellen. *GEO*, **11**, 134-135.

Latif, M., 2011: Was das Meer erzählt. *Gesund durch Homöopathie*, **1**, 18-19.

Lisitzin, A. P., **Thiede, J.** and **Kassens, H.**, 2011: Rossiysko-gemanskije raboty v Arktike: 15 let issledovaniy v vysokikh shirotakh (Russian German works in the Arctic: 15 years' research at high latitudes). *Vestnik Rossiyskoy Akademii Nauk (Newsletter of the Russian Academy of Sciences)*, **81** (5), 396-404.

Litt, T., Anselmetti, F. S., Cagatay, M. N., Kipfer, R., **Krastel, S., Schmincke, H. U.** and Sturm, M., 2011: A 500,000-year-long sediment archive drilled in eastern Anatolia. *Eos, Transactions American Geophysical Union*, **92** (51), 477-479, DOI 10.1029/2011EO510002.

Lucas, C. H., Pitt, K. A., Purcell, J. E., **Lebrato, M.** and Condon, R. H., 2011: What's in a jellyfish? Proximate and elemental composition and biometric relationships for use in biogeochemical studies. *ESA Ecology*, **92**, 1704.

Mehta, V., Meehl, G., Goddard, L., Knight, J., Ku-

mar, A., **Latif, M.**, Lee, T., Rosati, A. and Stammer, D., 2011: Decadal Climate Predictability and Prediction: Where Are We?. *Bulletin of the American Meteorological Society*, **92** (5), 637-640, DOI 10.1175/2010BAMS3025.1.

Polyakova, Y. I., **Kassens, H.**, Thiede, J., Lisitzin, A. P., Frolov, I. E., Timokhov, L. A., **Bauch, H. A.**, **Dmitrenko, I. A.** and **Bauch, D.**, 2011: Russian-German collaboration in the arctic environmental research. *Geography, Environment, Sustainability*, **4** (3), 85-113,

Rayner, D. and **Kanzow, T.**, 2011: The design strategy and methodology of the RAPID-MOC project moorings. *Underwater Technology: The International Journal of the Society for Underwater*, **29** (4), 159-171, DOI 10.3723/ut.29.159.

Rumohr, H., 2011: Nachruf auf Sebastian A. Gerlach: 17. 1. 1929 - 17. 6. 2010. *Mitteilungen der Deutschen Zoologischen Gesellschaft, Zoologie 2011*, 55-58.

Sager, W. W., Sano, T. and **Geldmacher, J.**, 2011: IODP Expedition 324: Ocean Drilling at Shatsky Rise Gives Clues about Oceanic Plateau Formation. *Scientific Drilling* (12, September 2011), 24-31, DOI 10.2204/iodp.sd.12.03.2011.

Schröder, J., **Gärtner, A.**, **Imhoff, J. F.** and **Hanel, R.**, 2011: The influence of pH and ammonia on the bactericidal efficiency of seawater ozonation. *Special publication / European Aquaculture Society*, 2011, 991-992.

Schwarzkopf, F.U. and **Böning, C.W.**, 2011: Geht den tropischen Ozeanen die Luft aus? Ventilation der Sauerstoffminimumzonen in den tropischen Ozeanen. *Forschung im HLRN-Verbund*, 90-91.

Tanhua, T., 2011: An update of the interior ocean carbon observations. *SOLAS News*, **12**, 24.

Vichi, M., Manzini, E., Fogli, P. G., Alessandri, A., **Patara, L.**, Scoccimarro, E., Masina, S. and Navarra, A., 2011: Erratum to: Global and regional ocean carbon uptake and climate change: sen-

sitivity to a substantial mitigation scenario. *Climate Dynamics*, **37** (11-12), 2551, DOI 10.1007/s00382-011-1144-8.

Wegner, C., Frey, K. and Michel, C., 2011: Arctic Sea Ice in Rapid Transition – a pan-Arctic Network integrating past, present and future. *Eos, Transactions American Geophysical Union*, **93** (13), 112.

Zamora, L., Prospero, J. M., Hansell, D. A., Trapp, J. M., **Landolfi, A.**, **Oschlies, A.** and Dentener, F., 2011: Phosphorus stress induced by atmospheric deposition to the surface waters of the subtropical North Atlantic. *SOLAS News*, **13**, 34-36.

Zindler, C., **Peeken, I.**, **Marandino, C.** and **Bange, H.**, 2011: Environmental control on the variability of DMS and DMSP in the Mauritanian upwelling region. *Biogeosciences Discussions*, **8**, 8591-8618, DOI 10.5194/bgd-8-8591-2011.

5.6 Electronic Publications

Piñero, E., Rottke, W., Fuchs, T., **Hensen, C.**, **Haeckel, M.**, and **Wallmann, K.**, 2011: 3-D Numerical modeling of methane hydrate deposits. *Proceeding of the 7th International Conference on Gas Hydrates* (ICGH 2011).

Wallmann, K., **Burwicz, E.**, **Ruepke, L.**, **Marquardt, M.**, **Piñero, E.**, **Haeckel, M.**, and **Hensen, C.**, 2011: Constraining the global inventory of methane hydrate in marine sediments. *Proceeding of the 7th International Conference on Gas Hydrates* (ICGH 2011).

Troll, VR, Klügel A, Longpré M-A, Burchardt S, Deegan FM, Carracedo JC, Wiesmaier S, Kuipers U, Dahren B, Blythe LS, **Hansteen T**, Freda C, Budd DA, Jolis EM, Jonsson E, Meade F, Berg S, Mancini L, Polacci M (2011) Floating sandstones off El Hierro (Canary Islands, Spain): the peculiar case of the October 2011 eruption, Solid Earth Discuss 3, 975-999, doi:10.5194/sed-3-975-2011

5.7 University Publications

Bachelor thesis

Büscher, Janina, 2011: Effects of ocean acidification on calcification, photosynthesis and respiration of the free-living coralline red alga *Lithothamnion glaciale*. Bachelorarbeit, Universität Kiel, 66 pp.

Elma, Eylem, 2011: Germination and seed bank analysis of *Zostera marina*. Bachelorarbeit, Christian-Albrechts-Universität, Kiel, Germany, 39 pp

Haase, Sabine, 2011: Atmosphärische Zirkulation und extremer Meereisrückgang in der Arktis: Gegenwärtiges und zukünftiges Auftreten der arktischen Dipol-Anomalie. Bachelorarbeit, Christian-Albrechts-Universität, Kiel, Germany, 32 pp

Ibenthal, Miriam, 2011: Geochemische Verteilungsmuster rezenter Sedimente im Ochotskischen Meer und der Beringsee. Bachelorarbeit, Christian-Albrechts-Universität, Kiel, 50 pp

Kemena, Tronje P., 2011: Analyse von zonalen Oberflächenströmungen im äquatorialen Atlantik aus Lagrange'schen Driftern und aus Altimetrie. Bachelorarbeit, Christian-Albrechts-Universität, Kiel, Germany, 38 pp

Kleinelanghorst, Christin, 2011: Die Beziehung der El Niño/Southern Oscillation und der Nordatlantischen Oszillation. Bachelorarbeit, Christian-Albrechts-Universität, Kiel, Germany, 26 pp

Krahwinkel, Bahne, 2011: Untersuchung der Hydroxylaminproduktion durch Archaeen. Bachelorarbeit, Universität Kiel, 49 pp.

Laeger, Kathrin, 2011: Kristallisationsbedingungen von Daziten der 800 BP Eruption des Vulkan Cerro Machín, Kolumbien. Bachelorarbeit, Christian-Albrechts-Universität zu Kiel, Kiel, 51 pp

Loose, Philipp, 2011: Mg/Ca, Sr/Ca und stabile Sauerstoffisotope in benthischen Foraminiferengehäusen (*Uvigerina peregrina* und *Hoeglundina elegans*) aus dem Golf von Mexico und der Floridastraße: Potential für Bodenwassertemperatur-

Rekonstruktionen. Bachelorarbeit, Christian-Albrechts-Universität zu Kiel, Kiel, xx pp

Lüttschwager, Gunther, 2011: Korrelation von seismischen und Bohrlochdaten am Beispiel des Van-Sees (Osttürkei). Bachelorarbeit, Christian-Albrechts-Universität, Kiel, 31 pp

Machura, Susanne, 2011: Toleranz der Pazifischen Auster *Crassostrea gigas* gegenüber klimawandel-relevanten, multiplen Umweltstressoren. Bachelorarbeit, Christian-Albrechts-Universität, Kiel, 48 pp

Mecking, Rebekka, 2011: Einfluss der synoptischen Situation auf die Validierung von Niederschlägen aus Satellitendaten über der Ostsee. Bachelorarbeit, Christian-Albrechts-Universität, Kiel, 62 pp

Mertzen, Matthias, 2011: Wie variiert die chemische Antifoulingverteidigung mit Algenart, Standort und Jahreszeit? = Do the defenses of *Fucus vesiculosus* and *Fucus serratus* against settlement of *Amphibalanus improvisus* vary seasonally?. Bachelorarbeit, Christian-Albrechts-Universität, Kiel, 63 pp

Metz, Dirk, 2011: Ökologisch-Chemische Untersuchungen zur dynamischen Anti-Fraß-Verteidigung ausgewählter Makroalgen der Ostsee. Bachelorarbeit, Christian-Albrechts-Universität, Kiel, 35 pp

Nowatzki, Eva, 2011: Mesoskalige und submesoskalige Sauerstoffvariabilität nördlich der Kapverdischen Inseln. Bachelorarbeit, Christian-Albrechts-Universität, Kiel, 40 pp

Ochs, Johanna, 2011: Vergleich zweier Sedimentationsräume der hohen Breiten zur Klimarekonstruktion. Bachelorarbeit, Christian-Albrechts-Universität zu Kiel, Kiel, 62 pp

Reintges, Annika, 2011: Abschätzung der Genauigkeit von Klimasimulationen im Bereich des Nordatlantiks. Bachelorarbeit, Christian-Albrechts-Universität, Kiel, 59 pp

Rieck, Jan-Klaus, 2011: Detektierung und Ver-

folgung von Agulhasringen mittels Altimetrie: Ausbreitungspfade und Lebenszyklen. Bachelorarbeit, Christian-Albrechts-Universität, Kiel, 37 pp

Rieken, Stellan, 2011: Mississippi Sedimenteintrag in den nördlichen Golf von Mexico während der letzten 42.000 Jahre. Bachelorarbeit, Christian-Albrechts-Universität zu Kiel, Kiel, 20 pp

Rumpel, Verena, 2011: Meteorologische Auswertung der TransBrom Sonne Kampagne im tropischen Westpazifik. Bachelorarbeit, Christian-Albrechts-Universität, Kiel, 61 pp

Rühs, Siren, 2011: Advektive Ausbreitung und Zeitskalen der Agulhas Leakage in einem globalen Ozeanmodell. Bachelorarbeit, Christian-Albrechts-Universität, Kiel, 50 pp

Sendelbeck, Anja, 2011: Untersuchung von räumlichen Skalen der äquatorialen Tiefenzirkulation anhand von direkten Strömungsmessungen. Bachelorarbeit, Christian-Albrechts-Universität, Kiel, 35 pp

Storr, Melanie, 2011: Untersuchungen der Bildung von Methan aus DMSP. Bachelorarbeit, Universität Kiel, 48 pp

Vogel, Bendix, 2011: Zusammenspiel der mit der meridionalen Umwälzzirkulation assoziierten Strömungskomponenten im subtropischen Nordatlantik. Bachelorarbeit, Christian-Albrechts-Universität, Kiel, 41 pp

Wittbrodt, Kerstin, 2011: Sommerliche Schwebstoffkonzentration vor den arktischen Küsten Sibiriens am Beispiel der Laptev-See. Bachelorarbeit, Christian-Albrechts-Universität zu Kiel, Kiel, 57 pp

Master thesis

Alexandridis, Nilolaos, 2011: Modeling the effect of abiotic and biotic factors on the vertical distribution of *Fucus vesiculosus* in the Baltic Sea. Masterarbeit, Christian-Albrechts-Universität, Kiel, 30 pp

Arteaga Quintero, Lionel Alejandro, 2011: Evaluation of regional patterns of light and nutrient colimitation in the global ocean. Masterarbeit, Christian-Albrechts-Universität, Kiel, 43 pp.

Berzunza Sanchez, Maria Margareta, 2011: Growth of three species of Mediterranean cold-water corals exposed to ocean acidification. Masterarbeit, Christian-Albrechts-Universität, Kiel, 109 pp

Grün, Matthias, 2011: Sublacustrine landslides and associated hazards along the Western Slope of Lake Ohrid (Macedonia/Albania). Masterarbeit, Christian-Albrechts-Universität zu Kiel, Kiel, 111 pp

Karstens, Jens, 2011: 3D seismic interpretation of volcanic mass wasting deposits offshore Montserrat. Masterarbeit, Christian-Albrechts-Universität, Kiel, 63 pp

Keller, Isabel, 2011: How hosts cope with a major threat in the ocean: Pipefish - *Vibrio* immunological and genotypic interactions. Masterarbeit, Christian-Albrechts-Universität, Kiel, 73 pp

Kunz, Anna Lena, 2011: Nachweis der Phenazin-Produktion in marinen Bakterien. Masterarbeit, Christian-Albrechts-Universität, Kiel, 113 pp

Lopez-Lopez, Lucia, 2011: Plankton Variability in the Mediterranean Sea. Insights from Crustacean and Gelatinous Zooplankton. Masterarbeit, Christian-Albrechts-Universität, Kiel, 92 pp

Zieringer, Moritz, 2011: The Hafnium and Neodymium isotopic composition of surface waters in the tropical Atlantic Ocean. Masterarbeit, Christian-Albrechts-Universität, Kiel, 50 pp

Diploma thesis

Boxhammer, Tim, 2011: Impact of ocean acidification on export and composition of sedimenting material in an Arctic offshore mesocosm study. Diplomarbeit, Christian-Albrechts-Universität, Kiel, 77 pp

Brase, Lisa, 2011: Einfluss des Lichtregimes auf die Fraßanfälligkeit von Makroalgen. Diplomarbeit, Christian-Albrechts-Universität, Kiel, 63 pp

Casties, Isabel, 2011: Effects of elevated seawater pCO₂ on the blue mussel *Mytilus edulis*. Diplomarbeit, Christian-Albrechts-Universität, Kiel, 58 pp

Claus, Martin, 2011: The Gulf Stream Extension Region: Its dynamics and interaction with the atmosphere. Diplomarbeit, Christian-Albrechts-Universität, Kiel, 65 pp

Doering, Kristin, 2011: Surface and deep-water hydrographic conditions over the last 18.000 years from the Peru coast based on $\delta^{18}\text{O}$ and Mg/Ca ratios of *Globogerinoides ruber* and *Uvigerina peregrina*. Diplomarbeit, Christian-Albrechts-Universität zu Kiel, Kiel, xx pp

Dürkefälden, Antje, 2011: Multi-stage evolution of primitive alkaline rocks from submarine volcanic cones on the north and southwest flanks of Fogo, Cape Verde Archipelago. Diplomarbeit, Christian-Albrechts-Universität zu Kiel, Kiel, 93 pp

Fuhlbrügge, Steffen, 2011: Analysis of atmospheric VSLs measurements during the DRIVE campaign in the tropical East Atlantic. Diplomarbeit, Christian-Albrechts-Universität, Kiel, 87 pp

Hansen, Julian, 2011: Untersuchung der prä-eruptiven Magmenentwicklung an Schmelzeinschlüssen des phonolitischen seamounts Cadamosto - Kap Verden. Diplomarbeit, Christian-Albrechts-Universität zu Kiel, Kiel, 68 pp

Harlaß, Jan, 2011: Einfluss des arktischen Meer-eises auf das Klima der Nordhemisphäre. Diplomarbeit, Christian-Albrechts-Universität, Kiel, 101 pp

Irion, Ines, 2011: Tektonische und stratigraphische Untersuchungen im Gebiet Piz Malat und Piz Mezzaun. Diplomarbeit, Christian-Albrechts-Universität, Kiel, 57 pp

Kabus, Chantal, 2011: Mate choice in a sex-role reversed pipefish *Syngnathus typhle*. Diplomarbeit, Christian-Albrechts-Universität, Kiel, 64 pp

Klostermann, Lars, 2011: Hydrography and stable isotopes (oxygen, carbon) in water masses off Peru and Ecuador. Diplomarbeit, Christian-Albrechts-Universität, Kiel, 49 pp

Kraft, Helene Anja, 2011: Lokalbebenanalyse am aktiven Kontinentalrand Südamerikas zwischen 34°S und 36°S. Diplomarbeit, Christian-Albrechts-Universität, Kiel, 90 pp

Lübben, Alexander, 2011: Quantifying regional methane emissions of the Batumi seep area in the eastern Black Sea. Diplomarbeit, Christian-Albrechts-Universität, Kiel, 120 pp

Mauer, Jan, 2011: Beschreibung der mesoskaligen Verteilung ausgewählter planktivorer Fischarten mit Hilfe von hydrografischen und ökologischen Parametern in der Deutschen Bucht. Diplomarbeit, Christian-Albrechts-Universität, Kiel, 74 pp

Miteva, Marieta, 2011: Kräftebilanz des äquatorialen Unterstroms im zentralen Atlantik bei 23°W. Diplomarbeit, Christian-Albrechts-Universität, Kiel, 36 pp

Ossenbrügge, Holger, 2011: Distribution of Pelagic Gastropods in the Eastern Atlantic Ocean. Diplomarbeit, Christian-Albrechts-Universität, Kiel, 154 pp

Poggemann, David-Willem, 2011: Tektonische und stratigraphische Untersuchungen im Gebiet Munt Müsella und Piz Mezzaun. Diplomarbeit, Christian-Albrechts-Universität, Kiel, 56 pp

Reichert, Patrick, 2011: Tektonische und stratigraphische Untersuchungen im Gebiet Il Corn und Munt Olivet. Diplomarbeit, Christian-Albrechts-Universität, Kiel, 55 pp

Schindlbeck, Julie Christin, 2011: Tektonische und stratigraphische Untersuchungen im Gebiet Munt Seja und Piz Mezzaun. Diplomarbeit, Christian-Albrechts-Universität, Kiel, 55 pp

Schultz, Hendrik, 2011: Recent population divergence of Alaskan three-spined sticklebacks. Diplomarbeit, Christian-Albrechts-Universität, Kiel, 66 pp

Schweers, Johanna, 2011: Characterisation of biogeochemical processes in methane-containing sediments of the Beaufort Sea (Arctic Ocean). Diplomarbeit, Christian-Albrechts-Universität, Kiel, 72 pp

Sollfrank, Nicole, 2011: The combined effect of variable food supply and elevated CO₂ partial pressure on feeding and calcification rates of the Mediterranean cold-water coral. Diplomarbeit, Christian-Albrechts-Universität, Kiel, 104 pp

Stiebens, Victor Alexander, 2011: Population genetics and mating strategies of the Loggerhead Sea Turtle (*Caretta caretta*) in Cape Verde. Diplomarbeit, Christian-Albrechts-Universität, Kiel, 77 pp

Stöven, Tim, 2011: Ventilation Processes of the Mediterranean Sea based on CFC-12 and SF₆ measurements. Diplomarbeit, Universität Kiel, 152 pp.

Striberny, Anja, 2011: Feeding of Calanus finmarchicus on the microplankton assemblage in the Trondheimsfjord. Diplomarbeit, Christian-Albrechts-Universität, Kiel, 41 pp

Struve, Torben, 2011: Late Quaternary water mass mixing in the Arctic Gateway - Evidence from radiogenic isotopes. Diplomarbeit, Christian-Albrechts-Universität, Kiel, 74 pp

Syre, Stefanie, 2011: Calcification, growth and shell microstructure in a *Mytilus galloprovincialis* population from Australia in response to elevated pCO₂ and temperature. Diplomarbeit, Christian-Albrechts-Universität, Kiel, 68 pp

Vardeh, David, 2011: Biogeochemical processes

at marine whale falls and methane seeps. Diplomarbeit, Christian-Albrechts-Universität, Kiel, 74 pp

Vogel, Sandra, 2011: Can parasites mediate sympatric speciation through their hosts's MHC genes? Example of the three-spined stickleback from Iceland. Diplomarbeit, Christian-Albrechts-Universität, Kiel, 72 pp

von Bechtolsheim, Florian, 2011: Do native and non-native populations of marine coastal molluscs differ in tolerance to abiotic stress? Experimental comparisons between biogeographic regions. GAME Ko-Betreuung Diplomarbeit, Uni Mainz, 97pp

Wrona, Thilo, 2011: Analysis of the comparability of two 3D seismic data sets acquired at Hydrate Ridge, offshore Oregon. Diplomarbeit, Christian-Albrechts-Universität, Kiel, 70 pp

Doctoral thesis/PhD

Baars, Oliver, 2011: Distribution and speciation of zinc, cadmium and cobalt in the Southern Ocean. Dissertation, Christian-Albrechts-Universität, Kiel, 151 pp

Fischer, Tim, 2011: Diapycnal diffusivity and transport of matter in the open ocean estimated from underway acoustic profiling and microstructure profiling. Dissertation, Christian-Albrechts-Universität, Kiel, 105 pp

Form, Armin, 2011: Influence of Anthropogenic Climate Change on the Ecophysiology of the Cold Water Coral *Lophelia pertusa*. Dissertation, Universität Kiel, 218 pp.

Geersen, Jacob Matthias, 2011: Structure and neotectonics of the Southern Chile forearc. Dissertation, Christian-Albrechts-Universität zu Kiel, Kiel, 73 pp

Goecke, Franz Ronald, 2011: Associations between microbes and macroalgae: Host, epiphyte and environmental factors. Dissertation, Christian-Albrechts-Universität, Kiel, 149 pp

Gärtner, Andrea, 2011: Isolation and characterization of bacteria from the deep-sea and their potential to produce bioactive natural products. Dissertation, Christian-Albrechts-Universität, Kiel, 144 pp

Harbers, Almuth Thea Elisabeth, 2011: Habitats and chemical characteristics of planktonic foraminifera in the Atlantic Ocean. Dissertation, Christian-Albrechts-Universität, Kiel, VIII, 76, 105 pp

Harders, Rieka, 2011: Submarine mass wasting processes along the continental slope of the Middle American Trench. Dissertation, Christian-Albrechts-Universität zu Kiel, Kiel, 128 pp

Haslob, Holger, 2011: Reproductive ecology of Baltic sprat and its application in stock assessment. Dissertation, Christian-Albrechts-Universität, Kiel, 133 pp

Heindl, Herwig, 2011: Antimicrobially active microorganisms associated with marine bryozoans. Dissertation, Christian-Albrechts-Universität, Kiel, 108 pp

Heinemann, Agnes, 2011: The suitability of *Mytilus edulis* as proxy archive and its response to ocean acidification. Dissertation, Christian-Albrechts-Universität, Kiel, VII, 133 S. pp

Hieronymi, Martin, 2011: Solar radiative transfer into the ocean: A study on underwater light fluctuations due to surface waves. Dissertation, Christian-Albrechts-Universität, Kiel, 103 pp

Hu, Marian Yong-An, 2011: Mechanistic studies on the physiology of CO₂ tolerance in cephalopods. Dissertation, Christian-Albrechts-Universität, Kiel, 201 pp

Jurkschat-Suiting, Ines, 2011: Internal vs. external forcing of shallow marine diatremes: a case study from the Iblean Mountains (SE-Sicily, Central Mediterranean). Dissertation, Christian-Albrechts-Universität, Kiel, V, 80 pp

Kalisch, John, 2011: Der Einfluss von Wolken auf den Strahlungsantrieb der Erde. Dissertation,

Christian-Albrechts-Universität, Kiel, 147 pp

Karaca, Deniz, 2011: Quantification of methane fluxes and authigenic carbonate formation at cold seeps along the continental margin offshore Costa Rica: A numerical modeling approach. Dissertation, Christian-Albrechts-Universität zu Kiel, Kiel, 116 pp

Keil, Katharina, 2011: Adaptation to contrasting habitats and heterozygosity-fitness correlations in eelgrass (*Zostera marina*). Dissertation, Christian-Albrechts-Universität, Kiel, 112 pp

Kock, Annette, 2011: N₂O and hydroxylamine in the eastern tropical Atlantic and Pacific Oceans. Dissertation, Christian-Albrechts-Universität, Kiel, 142 pp

Krabbenhöft, André, 2011: Stable Strontium Isotope ($\delta^{88/86}\text{Sr}$) Fractionation in the Marine Realm: A Pilot Study. Dissertation, Christian-Albrechts-Universität, Kiel, X, 128 pp

Lewandowska, Aleksandra, 2011: Effects of warming on the phytoplankton succession and trophic interactions. Dissertation, Christian-Albrechts-Universität, Kiel, 89 pp

Marohn, Lasse, 2011: Microchemical analyses of otoliths in Baltic Sea fish - Possibilities and limitations of otolith elemental analysis to describe individual life history and stock characteristics of fish in the Baltic Sea. Dissertation, Christian-Albrechts-Universität, Kiel, 129 pp

Moscoso, Eduardo, 2011: Seismic structure off- and onshore Maule, constraints for megathrust earthquakes in central Chile. Dissertation, Christian-Albrechts-Universität, Kiel, 119 pp

Olgun, Nazli, 2011: Impacts of airborne volcanic ash on the surface ocean biogeochemistry and marine ecosystems. Dissertation, Christian-Albrechts-Universität, Kiel, 178 pp

Prowe, Friederike, 2011: Effects of the feeding functional response on phytoplankton diversity and ecosystem functioning in ecosystem models. Dissertation, Universität Kiel, 188 pp.

Raddatz, Jacek, 2011: Origin, growth and demise of cold-water coral mound Challenger (IODP Site 1317). Dissertation, Christian-Albrechts-Universität, Kiel, 137 pp

Ryabenko, Evgeniya, 2011: Nitrogen isotopes in the Atlantic and Pacific oxygen minimum zones. Dissertation, Christian-Albrechts-Universität, Kiel, 130 pp

Saha, Mahasweta, 2011: Antisettlement defence of *Fucus vesiculosus*. Chemistry and Ecology. Dissertation, Christian-Albrechts-Universität, Kiel, 140 pp

Schaber, Matthias, 2011: Small to meso-scale distribution of Baltic cod (*Gadus morhua* L.) as resolved by hydroacoustics: Habitat preferences, environmental limits, and resulting implications for stock development. Dissertation, Christian-Albrechts-Universität, Kiel, 127 pp

Schneemann, Imke, 2011: Nachweis von Biosynthesegenen des bakteriellen Sekundärstoffwechsels sowie Isolierung und Strukturaufklärung von Naturstoffen aus ausgewählten Actinomyceten. Dissertation, Christian-Albrechts-Universität, Kiel, 198 pp

Schneider, Anke, 2011: Anthropogener Kohlenstoff im Mittelmeer und im tropischen Atlantik. Dissertation, Christian-Albrechts-Universität, Kiel, 104 pp

Schröder, Jan, 2011: Potential and limitations of ozone in marine recirculating aquaculture systems - Guidelines and thresholds for a safe application. Dissertation, Christian-Albrechts-Universität, Kiel, 99 pp

Stichel, Torben, 2011: Tracing water masses and continental weathering by neodymium and hafnium isotopes in the Atlantic sector of the Southern Ocean. Dissertation, Christian-Albrechts-Universität, Kiel, 129 pp

Stumpf, Roland, 2011: Late Quaternary variability of hydrography and weathering inputs on the SW Iberian shelf from clay minerals and the

radiogenic isotopes of neodymium, strontium and lead. Dissertation, Christian-Albrechts-Universität, Kiel, 106 pp

Stumpp, Meike, 2011: Mechanismen der CO₂ Toleranz bei Seeigeln des *Genus Strongylocentrotus* = Mechanisms of CO₂ tolerance in sea urchins of the genus *Strongylocentrotus*. Dissertation, Christian-Albrechts-Universität, Kiel, 299 pp

Werner, Kirstin, 2011: Holocene variability of surface and seep water advection to the Arctic Ocean - a multiproxy perspective from the eastern Fram Strait. Dissertation, Christian-Albrechts-Universität, Kiel, 150 pp

Worzewski, Tamara W. D., 2011: Marine magnetotellurics on a continental margin: imaging the hydration and dehydration cycle of the Costa Rican subduction zone. Dissertation, Christian-Albrechts-Universität, Kiel, IX, 162 S. pp

Habilitation

Asmus, Harald, 2011: Functioning of Intertidal Ecosystems of the Wadden Sea. (Professorial dissertation), Christian-Albrechts-Universität, Kiel, 209 pp

Winder, Monika, 2011: Climate forcing at the base of the aquatic food web. (Professorial dissertation), Christian-Albrechts-Universität, Kiel, 303 pp

Student research project

Opitz, Sebastian, 2011: Vergleichende Untersuchungen über den Einfluss von erhöhtem Seewasser pCO₂ auf den gemeinen Seestern *Asterias rubens* L. in der Ostsee. (Student research project), Christian-Albrechts-Universität, Kiel, 113 pp

Extern betreute Arbeiten

Birrer, Simone, 2011: How salinity affects the pipefish-Vibrio interaction. Masterarbeit, Swiss Federal Institute of Technology, Zürich, Switzerland, 66 pp

Appendices

Brenneke, Dennis, 2011: Effects of hypercapnia on growth of the green sea urchin, *Strongylocentrotus droebachiensis*. Bachelorarbeit, Universität Rostock, Rostock, 46 pp.

Filippova, Alexandra, 2011: Tracing Holocene weathering input into the Kara Sea with radiogenic isotopes (Sr and Nd). Masterarbeit, Universität Hamburg, Hamburg, 72 pp

Glockzin, Juliane, 2011: Isolierung und Charakterisierung einer Kollagenase aus einem marinen Bakterium für biotechnologische und ökologische Fragestellungen. Masterarbeit, FH Neubrandenburg, Neubrandenburg, 53 pp

Huhn, Mareike, 2011: Population-specific Survival during Exposure to Hypoxia and Heat: Global Change Increases Stress Tolerance of the Asian Green Mussel (*Perna viridis*). Diplomarbeit, Julius-Maximilians-Universität, Würzburg, 67 pp

Jacob, Juliane, 2011: The effects of biofilms associated with the surface of the brown macroalgae *Fucus vesiculosus* on macrofoulers. Bachelorarbeit, Universität Bonn, Bonn, 25 pp.

Keitel, Jonas, 2011: The native and the invasive: two muricid gastropods in the face of environmental stress in Akkeshi, North Japan. An interspecific comparison in stress tolerance. Diplomarbeit, Universität Potsdam, Potsdam, 52 pp

Müller, Rebecca, 2011: Responses of Tropical Macroalgae to Environmental Fluctuations. Diplomarbeit, Universität Rostock, Rostock, 82 pp

Nickelsen, Levin, 2011: A model-based investigation of iron limitation of marine phytoplankton in High-Nutrient Low-Chlorophyll regions. Master thesis, Carl von Ossietzky-Universität Oldenburg, 73 pp.

Pansch, Andreas, 2011: Tolerance towards abiotic stress in marine benthic species - Comparing native and invasive populations of *Crassostrea gigas*, *Ciona intestinalis* and *Codium fragile*. Diplomarbeit, Ernst-Moritz-Arndt Universität, Greifswald, 110 pp

Piller, Inga, 2011: Simultane Messung von N₂O und CO₂ im Oberflächenwasser – Charakterisierung der Methode. Diplomarbeit, Universität Hamburg, 80 pp.

Raraswati, Imbarini, 2011: Effect of light variability on native species *Fucus vesiculosus* and invasive species *Gracilaria vermiculophylla* in Burton Bay, Virginia. GAME Ko-Betreuung, Masterarbeit, Universität Bremen, 51 pp.

Schubert, Sophia, 2011: Stress response of native and invasive populations of intertidal invertebrates from the North Atlantic: an intraspecific comparison. Diplomarbeit, Universität Bremen, Bremen, 80 pp.

Schwenke, Theresa, 2011: Inductive chemical and mechanical defense in *Fucus vesiculosus* against herbivory – an analogy between East and West Atlantic populations?. Bachelorarbeit, Humboldt-Universität zu Berlin, Berlin, 38 pp

6. Scientific & Public Presentations

6.1 Invited Presentations

- Bange, H. W.**, 2011: Marine nitrous oxide and global change. Nitrogen and Global Change Conference, Edinburgh, UK, 14.04.2011.
- Bange, H. W.**, 2011: Nitrous oxide in the ocean. Theo Murphy International Scientific Meeting on 'Nitrous oxide, the forgotten greenhouse gas'. The Kavli Royal Society International Centre, Chicheley Hall, UK, 23.05.2011.
- Bange, H. W., Kock, A., and Zindler, C.**, 2011: Trace gas (N_2O , CH_4 , DMS) measurements at the Boknis Eck Time Series Station (Eckernförde Bay, SW Baltic Sea). The Baltic Sea Science Congress, St. Petersburg, Russia, 25.08.2011.
- Bange, H. W.**, 2011: Trace gases (N_2O , CH_4 , DMS) in the Ocean. 1st Sino-German Workshop on Marine Observation, Forecasting, and Utilization over the next Decade, Ocean University of China, Qingdao, China, 08.11.2011.
- Bauch, H. A.**, 2011: The AMOC's role during past Interglacials. Seminar, Niels Bohr Institute, Centre for Ice and Climate, University of Copenhagen, Copenhagen, Denmark, 11.11.2011.
- Bauch, H. A.**, 2011: Subsurface injections of Atlantic water into the Nordic Seas during deglaciations as trigger for early ice-sheet decay?. Seminar, College of Earth, Ocean, and Atmospheric Sciences, Oregon State University, Corvallis, Oregon, USA, 04.11.2011.
- Böttger-Schnack, R.**, 2011: Marine Plankton II: Introduction to Non-calanoïd Copepods. Pre-Conference Training Workshop on Morphology and Systematics of Copepods, Chetunal, Quintana Roo, Mexico, 05.07.2011.
- Bröckel, K. von, Czerny, J., and Büdenbender, J.**, 2011: KOSMOS – Kiel Off-Shore Mesocosms for Oceanographic Studies Technical Details. MESOAQUA PhD course "Mesocosms in aquatic ecology: use, problems and potentials", Kiel, 29.08.-02.09.2011.
- Büdenbender, J.**, 2011: Coralline red algae calcification. Seminar series on the mechanisms of biomineralization, Kiel, 28.02.2011.
- Büdenbender, J., Riebesell, U.**, and the Bergen KOSMOS team: Ocean acidification effects on North Atlantic pteropods during the Bergen KOSMOS Experiment 2011. BIOACID Annual Meeting 2011, Bremen, 26.-30.09.2011.
- Dengler, M.**, 2011: New Insights on the Atlantis II Brine Pool from Microstructure Temperature Observations. Red Sea Research Center Symposium, Thuwal, Saudi Arabia, 09.-11.04.2011.
- Dullo, W. C.**, 2011: Klima: Wie war es, wie ist es, wohin geht es? Worin liegt unsere Verantwortung für einen nachhaltigen Umgang mit der Erde? Humboldt-Kolleg: West-Östlicher Dialog in Wissenschaft und Kultur, Goethe-Institut Seoul, Seoul, Korea, 23.09.2011.
- Dullo, W. C.**, 2011: Was wissen coralline Schwämme und Kalkalgen über das Klima? Festvortrag anlässlich der Verabschiedung von Prof. Dr. Baba Senowbari-Daryan. Festkolloquium an der Universität zu Erlangen, Erlangen, 28.01.2011.
- Eisenhauer A.**, 2011: Strontium isotope fractionation and its application in Earth system sciences, Goldschmidt Conference 2011, Prague, Czech Republic, 14-19.08.2011.
- Eisenhauer A.**, 2011: Isotope Fractionation of Alkaline Earth elements and their application in Earth Sciences, Geokolloquium Universität Jena, Jena, 21.11.2011
- Eizaguirre, C.**, 2011: Adaptive frequency shifts maintain standing genetic variation at MHC genes. Socio-Environmental Dynamics over the Last 12,000 Years: The Creation of Landscapes II. Human development and landscapes, Kiel, 03.2011.
- Engel, A.**, Borchard, C., Bellerby, R., **Klavsén, S.**, Piontek, J., **Riebesell, U.** and **Schulz, K.**, 2011: Sensitivity of DOC production to pCO_2 in arctic pelagic communities: Insights from the 2010 Svalbard mesocosm study. EPOCA Third Annual Meeting, Royal Academy of Belgium for Science and the Arts, Brussels, Belgium, 09.-13.05.2011.
- Fleischer, D.**, 2011: A path to filled archives - how bumpy is it going to be? eSciDoc Days 2011, Harnack Hause Max-Planck Gesellschaft, Berlin, 26.-27.10.2011.
- Form, A.**, and **Riebesell, U.**, 2011: Coping with ocean acidification during long-term exposure in the cold-water coral *Lophelia pertusa*. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.
- Frank, M.**, 2011: Cosmogenic nuclides in marine archives as tracers in paleoceanography and paleoclimatology. ESF-LFUI Conference on Cosmogenic Nuclides, Obergurgl, Austria, 08.-13.08.2011.
- Frank, M.**, 2011: Klima- und Ozeanwandel im Laufe der Erdgeschichte – Der Meeresboden erzählt. Vortrag im Rahmen der Klimaschutzwochen der Stadtwerke Bremen, Bremerhaven, 20.09.2011.
- Frank, M.**, 2011: Klima- und Ozeanwandel im Laufe der Erdgeschichte – Der Meeresboden erzählt. Vortrag im Rahmen der Klimaschutzwochen der Stadtwerke Bremen, Bremen, 21.09.2011.
- Frank, M.**, 2011: Tracing present and past ocean circulation and continental weathering with radiogenic isotopes. Seminarvortrag Xiamen University, Xiamen, China, 05.09.2011.
- Froese, R.**, 2011: Fischdiversität limnischer und mariner Ökosysteme. 8. Tagung der Gesellschaft für Ichthyologie, Frankfurt, 31.08.-03.09.2011.
- Froese, R.**, 2011: Pathways towards sustainable and profitable fisheries. Fisheries Centre Seminar,

University of British Columbia, Vancouver, British Columbia, Canada, 08.03.2011.

Froese, R., 2011: Proper Implementation of the MSY-Concept in the CFP. A Hearing in the European Parliament, Brussels, Belgium, 30.11.2011.

Froese, R., 2011: Simple approaches to data-poor stock assessment. Aligning New Assessment Strategies, Troutdale, Oregon, USA, 09.-10.03.2011.

Froese, R., 2011: Towards healthy stocks and healthy profits in Baltic fisheries. European Maritime Day Conference, Gdansk, Poland, 19.-20.05.2011.

Froese, R., 2011: Towards healthy stocks and healthy profits in European fisheries. Expert panel at the Hearing „How much fish can be safely caught“ at the European Parliament, Brussels, Belgium, 03.05.2011.

Froese, R., 2011: Winners and Losers in the Future Ocean: Insights from Millions of Samples. EDIT Symposium, Paris, France, 18.01.2011.

Getzlaff, K., Lehmann, A. and Hinrichsen, H.-H., 2011: The response of the Baltic Sea to climate variability. 8th Baltic Sea Science Congress, St. Petersburg, Russia, 23.08.2011.

Haeckel M., 2011: Natürliche Gashydrate – Zukünftige Energiequelle der Zukunft und CCS-Option?. MARICUBE „ergeb: Forum Energie“, Brunsbüttel, 02.12.2011.

Hauss, H., Franz, J. and Sommer, U., 2011: Virtues and Vices of shipboard mesocosms in simulating upwelling events. MESOAQUA PhD Course/Workshop, IFM-GEOMAR, Kiel, 29.08.-02.09.2011.

Hoernle, K., 2011: Petrology/Geochemistry of the Galapagos Hotspot and Hotspot-Ridge Interaction. Chapman Conference on The Galápagos as a Laboratory for the Earth Sciences, Puerto Ayora, Galápagos, Ecuador, 25.-30.07.2011.

Iyer, K., Ruepke, L., Phipps Morgan, J. and Grevemeyer, I., 2011: Hydration of ultramafic

rocks: a numerical perspective. 8. International Workshop on Water Dynamics, Sendai, Japan, 08.-10.03.2011.

Keenlyside, N. S. and Omrani, N. E., 2011: Potential role of the stratosphere in Atlantic Multi-decadal Variability. 25. IUGG General Assembly Earth on the Edge: Science for a Sustainable Planet, Melbourne, Australia, 28.06.-07.07.2011.

Keenlyside, N. S. and Omrani, N. E., 2011: Towards enhancing decadal prediction: Stratosphere's integral role Atlantic Multi-decadal Variability. 2011 International Conference on Climate Change, Taipei, Taiwan, 06.-07.12.2011.

Keenlyside, N. S., Reintges, A., Omrani, N. E., Ba, J. and Martin, T., 2011: Comments on decadal prediction in the Atlantic Sector. AGCI workshop: Making Sense of the multi-model decadal prediction experiments from CMIP5, Aspen, USA, 26.06.-01.07.2011.

Keller, D. and Oschlies, A., 2011: Global Marine Biogeochemical Modeling and the Value of Mesocosm Data: It's Usefulness, Problems, and Potential. MESOAQUA PhD Course/Workshop, IFM-GEOMAR, Kiel, 29.08.-02.09.2011.

Kennedy, E. V., Halloran, P. R., Perry, C. T., Iglesias-Prieto, R., Carricart-Ganivet, J. P., Wisshak, M., Fine, M., **Form, A.**, Schönberg, C. H. L., Stevens, J. R., and Mumby, P. J., 2011: Balancing the carbonate budget: maintenance of positive framework growth in the Caribbean requires local and global action. 14th Reef Conservation Meeting, London, UK, 03.12.2011.

Körtzinger, A., 2011: Oxygen in the Ocean - Dynamics, Trends and New Observational Approaches. Earth Science Colloquium, Lamont-Doherty Earth Observatory, Columbia University, Palisades, USA, 29.04.2011.

Körtzinger, A., 2011: Taking the pulse of the ocean's CO₂ system. Colloquium on the occasion of the 65th birthday of Dr. Bernd Schneider, Leibniz Institute for Baltic Sea Research, Warnemünde,

13.05.2011.

Körtzinger, A., 2011: The Anthropogenically Perturbed Marine Carbon Cycle - Status, Trends, and New Observational Approaches. GDCh-Wissenschaftsforum Chemie 2011, German-Chinese Symposium 'Chemistry and Water', Bremen, 05.09.2011.

Körtzinger, A., 2011: Recent instrument and sensor developments for marine carbon observations. IOCCP Surface Ocean CO₂ Data-to-Flux Workshop, Paris, France, 13.09.2011.

Körtzinger, A., 2011: The ocean's source/sink function for CO₂ (and N₂O) - current knowledge, new approaches, future observation strategies. Cost Action 735 Final Event, Frascati, Italy, 29.11.2011.

Kopp, H., 2011: Margin segmentation along-strike and across-strike: Impact on rupture propagation and tsunamigenesis. British Geophysical Association Meeting "Controlling factors of subduction zone earthquakes", London, United Kingdom, 10.-11.02.2011.

Kopp, H., 2011: Sailing the seven seas: from seafloor images into the seismogenic zone. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Koppers, A. P., Yamazaki, T. and **Geldmacher, J.**, 2011: On the Possible Relation of the Louisville Hotspot and Ontong Java Plateau from Integrated Ocean Drilling Program Expedition 330 Results. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Kriest, I., 2011: Sensitivity of biogeochemical models to particle export and recycling. 3. GEOTRACES Data-Model Synergy Workshop, Barcelona, Spain, 14.-17.11.2011.

Krüger, K., 2011: Vulkane und Klima Lokale Ursache - Globale Wirkung? Wissen Schaffen Vortrag, IFM-GEOMAR, Kiel, 10.05.2011.

Körtzinger, A., 2011: The Anthropogenically Perturbed Marine Carbon Cycle Status, Trends,

and New Observational Approaches. GDCh-Wissenschaftsforum Chemie 2011, Deutsch-Chinesisches Sondersymposium „Chemistry and Water“, Bremen, 05.09.2011.

Körtzinger, A., 2011: Oxygen in the Ocean - Dynamics, Trends and New Observational Approaches. Lamont-Doherty Earth Observatory, Columbia University, Earth Science Colloquium, Palisades, USA, 29.04.2011.

Körtzinger, A., 2011: Recent instrument and sensor developments for marine carbon observations. IOCCP Surface Ocean CO₂ Data-to-Flux Workshop, Paris, France, 12.-13.09.2011.

Körtzinger, A., 2011: Taking the pulse of the ocean's CO₂ system. Festkolloquium anlässlich des 65. Geburtstages von Dr. Bernd Schneider, Rostock/Warnemünde, 13.05.2011.

Laigle, M., Bécel, A., Charalampakis, M., Charvis, P., Diaz, J., **Flueh, E. R.**, Evain, M., Gallart, J., Galvé, A., Gesret, A., Hirn, A., Kissling, E., **Kopp, H.**, Nicolich, R., Sachpazi, M. and **Weinzierl, W.**, 2011: Approach to submerged fore-arc subductions in the Lesser Antilles and Hellenic arcs: integrated marine MCS, refraction, and OBS seismic activity and noise recording. EGU General Assembly 2011, Vienna, Austria, 03.-06.04.2011.

Latif, M., 2011: Climate Change – Fact or fiction?. 2. Young Scientist Excellence Cluster Conference on Marine and Climate Research, Bremen, 04.-05.10.2011.

Latif, M., 2011: Climate variability – where do we stand?. Symposium to honour the scientific work of Klaus Hasselmann, Hamburg, 09.11.2011.

Latif, M., 2011: Dekadische Klimavariabilität im Atlantik: Ursachen und Auswirkungen. Leibniz-Institut für Troposphärenforschung, Leipzig, 04.05.2011.

Latif, M., 2011: Dürre in Russland, Überschwemmungen in Pakistan und Australien – was ist nur mit dem Wetter los? 6. ExtremWetterKongress, Hamburg, 12.-15.04.2011.

Latif, M., 2011: The Equatorial Atlantic zonal mode: Dynamics, predictability and implications for ENSO forecasting. WCRP OSC Climate Research in Service to Society, Denver, USA, 24.-28.10.2011.

Latif, M., 2011: Global Climate Change in History and Future. Summer School „Climate Change and Impact in the North Sea“, Lauenburg, 21.09.2011.

Latif, M., 2011: Global change from space and in models. Geoinformatik 2011 : Geochange, Münster, 15.-17.06.2011.

Latif, M., 2011: Globale Erwärmung – Fakt oder Fiktion. Was Messungen und Modelle über unser Klima verraten. Physikalisches Kolloquium, Paderborn, 15.12.2011.

Latif, M., 2011: How predictable is climate?. Fakultätskolloquium, Institut für Theoretische Physik, Uni Leipzig, Leipzig, 18.10.2011.

Latif, M., 2011: The Impact of Global Warming on the Oceans. Internationaler Umweltrechtstag 2011, Hamburg, 15.09.2011.

Latif, M., 2011: Internal and External Variability: Kiel Climate Model versus Data. THOR Annual Meeting, Bergen, Norway, 09.-11.11.2011.

Latif, M., 2011: Internal and external variability in the Kiel Climate Model. Seminarvortrag KNMI, DeBilt, The Netherlands, 13.09.2011.

Latif, M., 2011: Klimaextreme und Naturkatastrophen – Veränderungen und Prognosen für Norddeutschland. KLIMA 2011 Klimawandel und Katastrophenschutzmanagement, Hochschule für Angewandte Wissenschaften Hamburg, Hamburg, 07.11.2011.

Latif, M., 2011: Klimaforschung am IFM-GEOMAR. Institut für Physik der Atmosphäre, DLR, Oberpfaffenhofen-Weßling, 10.03.2011.

Latif, M., 2011: Klimamodelle – Projektion der Zukunft?. Kolloquium Robert-Bosch-Kolleg, Gerlingen, 10.10.2011.

Latif, M., 2011: Klimawandel. Wirtschaftstag GreenTech – Auswirkungen der Energiewende,

Hochschule für angewandte Wissenschaften, Hof, 14.12.2011.

Latif, M., 2011: Ocean and Climate. World Ocean Review, Brussels, Belgium, 19.04.2011.

Latif, M., 2011: Ocean and Climate. DPG Physics School „Physics of the Ocean“, Bad Honnef, 11.-16.09.2011.

Latif, M., 2011: Predictability of Weather and Climate. Kolloquium ETH Zürich, Zürich, Switzerland, 04.10.2011.

Latif, M., 2011: Predictability of climate. Physical Oceanography Laboratory, Ocean University of China, Qingdao, VR China, 29.04.2011.

Latif, M., 2011: Quo vadis Klima? Eine Bestandsaufnahme mit Klimatologe Prof. Dr. Mojib Latif. Vortragsreihe „Klima und Ressourcen“, Frankfurt a.M., 14.12.2011.

Latif, M., 2011: Seasonal Cycle and Interannual Variability: Implication for models. Workshop on Coupled Ocean-Atmosphere-Land Processes in the Tropical Atlantic, University of Miami, Miami, USA, 24.03.2011.

Latif, M., 2011: Understanding simulated long-term changes in the North Atlantic MOC. RAPID - USA MOC International Science Meeting, Bristol, UK, 12.-15.07.2011.

Latif, M., 2011: Wie vollzieht sich der Klimawandel im Meer?. Öffentliches Symposium, Warnsignal Klima: Die Meere – Änderungen und Risiken, Hamburg, 20.09.2011.

Latif, M., 2011: The challenge of long-term climate change. National Marine Environmental Forecasting Center, Beijing, China, 27.04.2011.

Latif, M., 2011: The challenge of long-term climate change. Physical Oceanography Laboratory, Ocean University of China, Beijing, China, 28.04.2011.

Latif, M., 2011: The challenge of long-term climate change. Institute of Oceanology, Chinese Academy of Sciences, Qingdao, China, 29.04.2011.

Latif, M., 2011: The challenge of long-term climate change. Managing Alpine Future II - International Conference 2011, Innsbruck, Austria, 21.-23.11.2011.

Lehmann, A., Getzlaff, K. and Huneke, W., 2011: The response of the Baltic Sea to climate variability. 11. Deutsch-Polnisches Symposium zur Küstenforschung, Swinoujscie, Poland, 17.11.2011.

Lischka, S., 2011: Arctic sea butterfly in the worlds' northernmost settlement, Ny Ålesund (Svalbard) – Can *Limacina helicina* withstand ocean acidification?. SFOS seminar, University of Alaska, Fairbanks, Alaska, 11.03.2011.

Maneja, R., Piatkowski, U. and Melzner, F., 2011: Ocean acidification impacts statolith microstructure and prey capture efficiency in early life cuttlefish, *Sepia officinalis*. 4. International Symposium on Coleoid Cephalopods Through Time, Staatliches Museum für Naturkunde, Stuttgart, 08.09.2011.

Marandino, C., 2011: Using the eddy correlation technique to measure open ocean DMS air-sea fluxes. Seminar, Yantai Institute for Coastal Zone Research, Yantai, China, 03.11.2011.

Marandino, C., 2011: Using the eddy correlation technique to measure open ocean DMS air-sea fluxes. 8. Japanese-German Frontiers of Science Symposium, Tokyo, Japan, 28.10.2011.

Marandino, C., 2011: The role of the ocean in the atmospheric budget of OVOCs. Seminar for Department of Atmospheric Sciences, Peking University, Beijing, China, 08.11.2011.

Maraun, D., 2011: How well do regional climate models represent the influence of synoptic air-flow on local precipitation extremes?. Norsk Regnesentral, Oslo, Norway, 13.03.2011.

Maraun, D., 2011: VALUE – Validating and Integrating Downscaling Methods for Climate Change Studies. European Science Foundation, Brussels, Belgium, 24.02.2011.

Meyerhöfer, M., 2011: Presentation of the German project BIOACID (Biological Impacts of Ocean ACIDification). UK Ocean Acidification Research Programme: First Annual Science Meeting: Cambridge, UK, 06.-07.01.2011.

Meyerhöfer, M., Riebesell, U., Gattuso, J. P., and the 2010 Svalbard team: EPOCA 2010 mesocosm CO₂ enrichment experiment in Arctic waters. 10th Ny-Ålesund Seminar, Norwegian Institute for Air Research, Kjeller, Norway, 25.-26.10.2011.

Oschlies, A., 2011: Challenge of global model parameterisations and implications for the prediction of O₂ changes. Ocean Deoxygenation Meeting, Toulouse, France, 24.-26.10.2011.

Oschlies, A., 2011: Climate Engineering - Notoperation gegen den Klimawandel. Schleswig-Holsteinische Universitäts-Gesellschaft Leck, Leck, 20.09.2011.

Oschlies, A., 2011: Climate Engineering - Notoperation gegen den Klimawandel. Schleswig-Holsteinische Universitäts-Gesellschaft Friedrichstadt, Friedrichstadt, 05.10.2011.

Pahlow, M., 2011: Model of Optimal Nitrogen Fixation. 3rd International Workshop on Global Change Projection: Modeling, Intercomparison, and Impact Assessment, Tsukuba, Japan, 10.03.2011.

Piatkowski, U., 2011: Cephalopod International Advisory Council (CIAC): 30 years in the service of cephalopod research (1981-2011). EuroCeph 2011 Cephalopod Biology Research in the 21st Century – A European Perspective, Vico Equense, Italy, 07.-10.04.2011.

Piatkowski, U., 2011: Kalmare und Kraken: Athleten der Ozeane. Biologisches Kolloquium, Siegen, 04.05.2011.

Portnyagin, M., Mironov, N., Ponomareva, V., Bindeman, I., **Hauff, F.**, Sobolev, A., Kayzar, T., Garbe-Schönberg, D. and **Hoernle, K.**, 2011: Arc Magmas from Slab to Eruption: The Case of Kliuchevskoy Volcano. Goldschmidt Conference

2011, Prague, Czech Republic, 14.-19.08.2011.

Quack, B., Krüger, K., Atlas, E., Tegtmeier, S., Wittke, F., Hepach, H., Fuhlbrügge, S., Bange, H. W., and Wallace, D. W. R., 2011: Halocarbon emissions from tropical oceans and their transport into the stratosphere. SOPRAN Annual Meeting, Heidelberg, 22.03.2011.

Quack, B., 2011: Organische Brom- und Jodverbindungen im Meer. Jahrestagung der wasserchemischen Gesellschaft der GDCH, Norderney, 31.05.2011.

Quack, B., Krüger, K., Hepach, H., Wittke, F., Tegtmeier, S., Petrick, S., Fuhlbruegge, S., Wallace, D. W. R. and Atlas, E., 2011: Halogenated trace gases from the ocean to the atmosphere. GDCH Wissenschaftsforum Chemie, Bremen, 05.09.2011.

Quack, B., Krüger, K., Hepach, H., Wittke, F., Tegtmeier, S., Petrick, S., Fuhlbruegge, S., Wallace, D. W. R. and Atlas, E., 2011: Halogenierte Spurengase aus dem Ozean. GDCH Wissenschaftsforum Chemie, Bremen, 06.09.2011.

Ragazzola, F., Form, A., Foster, L., Büscher, J., Hansteen, T., and Fietzke, J., 2011: Response of coralline alga *Lithothamnion glaciale* Kjellman to ocean acidification. Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Ragazzola, F., Form, A., Foster, L., Büscher, J., Hansteen, T., and Fietzke, J., 2011: Response of coralline alga *Lithothamnion glaciale* Kjellman to ocean acidification. 2nd BIOACID annual meeting, Bremen, 26.-30.09.2011.

Reusch, T. B. H., 2011: Adaptation to global change? – two marine examples from the base of the food web. Center of Marine Evolutionary Biology yearly assembly CeMEB, Tjärnö, Sweden, 10.-11.10.2011.

Reusch, T. B. H., 2011: Adding a Darwinian perspective to Marine Biology. Bioresources from the Oceans, Workshop Berlin-Brandenburgische Akademie der Wissenschaften, Berlin, 28.-

29.11.2011.

Reusch, T. B. H., 2011: Globaler Wandel im Meer – droht ein Massensterben in den Ozeanen? Seminar Mut zur Nachhaltigkeit, Forum für Verantwortung, Saarbrücken, 06.10.2011.

Reusch, T. B. H., 2011: Marine Evolutionary Ecology. Seminar des Institutes für Hydrobiologie und Fischereiforschung der Uni Hamburg, Hamburg, 21.01.2011.

Roth, O., Scharsack, J., Kalbe, M., **Haase, D.** and **Reusch, T. B. H.**, 2011: A pipefish with a strange immune system? Transcriptomic and other insights into the immunogenetics of Syngnathids . 1. Syngnathid conference, Kristineberg, Sweden, 26.-28.04.2011.

Schneider, B., **Park, W.**, Krebs-Kanzow, U. and Leduc, G., 2011: Tropical Climate Variability in the past simulated by the Kiel Climate Model. PMIP3 Workshop on Tropical Climate Variability with a focus on Last Millennium, Mid-Holocene and Last Glacial Maximum, Villefranche-sur-Mer, France, 21.-23.09.2011.

Sommer, U., 2011: Bottom-up and top-down effects in plankton. MESOAQUA PhD Course/Workshop, IFM-GEOMAR, Kiel, 29.08.-02.09.2011.

Sommer, U., 2011: Mnemiopsis leidyi at the intersexction of two hot research lines: Invasion ecology and „rise of the slime“. 2. Acqua Jelly Day, Charlottenlund, Denmark, 10.10.2011.

Sommer, U., 2011: Phytoplankton blooms in warmer waters - less biomass, smaller algae, slightly earlier? . PIK Seminar, Potsdam, 04.05.2011.

Sommer, U., 2011: The response of marine plankton to climate change. Bioresources from the ocean, Berlin, 29.11.2011.

Spielhagen, R. F., 2011: Eiszeiten, Warmzeiten und Wikinger – vom Klima zwischen Grönland und Europa. 6. Grönland Filmfest, Kiel, 08.04.2011.

Spielhagen, R. F., 2011: Observed variability from instrumental records and proxy data . Arctic

Climate Change - Economy and Society (ACCESS) Workshop, Bremen, 05.-06.09.2011.

Spielhagen, R. F., Glogowski, S., Nørgaard-Pedersen, N. and Schmidt, A., 2011: Arctic Ocean Paleoenvironmental Change in the last 50 kyr Reconstructed from an Alpha Ridge to Gakkel Ridge Transect. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Stramma, L., 2011: Ocean oxygenation, oxygen minimum zones (OMZs) and future changes. EUR-OCEANS Conference - Ocean deoxygenation and implications for marine biogeochemical cycles and ecosystems, Toulouse, France, 24.-26.10.2011.

Treude, T., 2011: The deep-sea floor and Global Change: Understanding potential consequences of seafloor warming for deep-sea ecosystems, DSF³ Workshop, Zürich, Switzerland, 27.01.2011.

Treude, T., 2011: Marine cold seeps: Chemosynthetic communities driven by microbial methane degradation, MPI für Terrestrische Mikrobiologie, Marburg, 28.02.2011.

Treude, T., 2011: Marine cold seeps: Chemosynthetic communities driven by microbial methane degradation, IOW seminar, Warnemünde, 26.10.2011.

Wahl, M. and **Lenz, M.**, 2011: Supporting and networking young researchers: a new concept in teaching marine sciences . Faculty for Fisheries and Marine Science, Bogor Agricultural University (IPB), Bogor, Indonesia, 26.04.2011.

Wallmann, K., 2011: Storage of CO₂ in Marine Sediments. EU Parliament, Brussels, Belgium, 02.02.2011.

Wallmann, K., 2011: CO₂-Speicherung im Meeresboden. Schutzgemeinschaft Deutsche Nordsee, Husum, 17.03.2011.

Wallmann, K., 2011: CO₂-Speicherung im Meeresboden. Nationale Maritime Konferenz, Wilhelmshaven, 27.05.2011.

Wallmann, K., **Burwicz, E.**, **Ruepke, L.**, **Marquardt, M.**, **Piñero, E.**, **Haeckel, M.**, and **Hens-**

en, C., 2011: Constraining the global inventory of methane hydrate in marine sediments. 7th International Conference on Gas Hydrates (ICGH2011), Edinburgh, UK, 17.-21.07.2011.

Wallmann, K., 2011: CO₂-Speicherung im Meeresboden. Greenpeace, Hamburg, 22.08.2011.

Wallmann, K., 2011: CO₂-Speicherung im Meeresboden. BMWi Workshop, Bremen, 27.09.2011.

Wallmann, K., 2011: CO₂-Speicherung im Meeresboden. Krupp (BUND), Kiel, 05.10.2011.

Wallmann, K., 2011: Marine Gashydrates: Production of Natural Gas and Storage of CO₂. Int. Workshop on Gas Hydrates, ISS (Töpfer-Institut), Potsdam, 08.11.2011

Wallmann, K., 2011: Marine Gashydrates: Production of Natural Gas and Storage of CO₂. RWE Dea Forschungstag, Hamburg, 10.11.2011.

Wallmann, K., 2011: Marine Gashydrates: Production of Natural Gas and Storage of CO₂. BMWi Statusseminar, Warnemünde, 01.12.2011.

Yogodzinski, G., Arndt, S., Turka, J. R., Kelemen, P. B., Vervoort, J. D., **Portnyagin, M.** and **Hoernle, K.**, 2011: Nature and Significance of the High-Sr Aleutian Lavas . AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

van den Bogaard, C., **Portnyagin, M.**, **Ponomareva, V. V.**, **Derkachev, A.**, **Dirksen, O.**, **Diekmann, B.**, **Nürnberg, D.** and **Garbe-Schönberg, D.**, 2011: Tephrochronology in the NW Pacific region in the frame of the KALMAR Project. Workshop on Marine Tephrochronology, Geological Society London, London, UK, 25.10.2011.

6.2 Scientific Presentations

Almeev, R., **Portnyagin, M.**, Wengorsch, T., Sano, T., Natland, J. and Garbe-Schönberg, D., 2011: Highly Depleted Melt Inclusions in Olivine from Shatsky Rise. Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Almeev, R., Ariskin, A., Botcharnikov, R., Holtz, F., Shishkina, T., **Portnyagin, M. V.**, Kimura, J. I. and Ozerov, A., 2011: Modeling magma differentiation processes in Volcanic systems: Key examples from Kamchatka island arc (Klyuchevskoy, Bezymianny and Mutnovsky Volcanoes) . KALMAR - Second Bilateral Workshop on Russian-German Cooperation on Kurile-Kamchatka and Aleutian Marginal Sea-Island Arc Systems, Trier, 16.-20.05.2011.

Anselmetti, F., Cagatay, N., Kipfer, R., **Krastel-Gudegast, S.**, Litt, T., Sturm, M., Örcen, S. and **Winkelmann, D.**, 2011: Lake Van Drilling Project 'PaleoVan' (ICDP): A long continental record in Eastern Anatolia covering several glacial-interglacial cycles. 5. International Limnogeology Congress, ILIC 2011, Konstanz, 31.08. - 03.09.2011.

Anselmetti, F., Cagatay, N., Kipfer, R., **Krastel-Gudegast, S.**, Sturm, M. and **Winkelmann, D.**, 2011: Lake Van Drilling Project 'PaleoVan' (ICDP): A long continental sedimentary record in Eastern Anatolia of the last ca 400.000 years. 18. INQUA 2011, Bern, Switzerland, 21.-27.07.2011.

Arndt, C., Moison, M. and **Sommer, U.**, 2011: Algae - Benthic Copepods - Fish Larvae: Testing an aquaculture food chain with emphasis on fatty acids. Aquaculture Europe Conference, Rhodes, Greece, 18.-21.10.2011.

Arroyo, I. G., **Grevenmeyer, I.**, **Behrmann, J.**, Ranero, C. R., von Huene, R. and **Flüh, E. R.**, 2011: CRISP-EQ: Costa Rican Seismogenic potential outlined by IODP drilling and the 2002 Osa earthquake sequence. Gemeinsames Kolloquium der Schwerpunktprogramme ICDP - International Continental Scientific Drilling Program und IODP -

Integrated Ocean Drilling Program, Münster, 14.-16.03.2011.

Ba, J., Keenlyside, N., **Park, W.** and Hawkins, E., 2011: North Atlantic Multi-decadal Variability Simulated in CGCMs. XXV IUGG General Assembly Earth on the Edge: Science for a Sustainable Planet , Melbourne, Australia, 28.06.-07.07.2011.

Bach, L., 2011: Inorganic carbon uptake mechanisms in the coccolithophore *Emiliana huxleyi*: The physiological basis. EGU Ocean Acidification Meeting, Penang, Malaysia, 20-24.06.2011.

Baese, R. and Schenk, V., 2011: Fluid-rock interaction during eclogitisation: Evidence from HP metamorphic rocks from Sulawesi, Indonesia. Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Bancala, S., **Krüger, K.** and Giorgetta, M., 2011: The preconditioning of major sudden stratospheric warmings. DLR, Oberpfaffenhofen, 28.07.2011.

Baranov, B., **Werner, R.**, Tsukanov, N., **Portnyagin, M.** and Yogodzinski, G., 2011: Multibeam investigations in the SO201-2 cruise : an overview. KALMAR - Second Bilateral Workshop on Russian-German Cooperation on Kurile-Kamchatka and Aleutian Marginal Sea-Island Arc Systems, Trier, 16.-20.05.2011.

Bauch, H. A., 2011: Cold climate variability on a millennial scale: a comparison of glacial periods. IODP-Workshop on 'Assessing the History of the Greenland Ice Sheet Through Future Drilling', Corvallis, Oregon, USA, 07.-09.11.2011.

Bauch, H. A. and **Kandiano, E.**, 2011: Variations in the Polar-Directed Oceanic Heat During Past Interglacials: Causes and Consequences. INQUA 2011, Bern, Switzerland, 21.-27.07.2011.

Bauch, H. A., Taldenkova, E., Stepanova, A., Ovsepyan, Y. and Rudenko, O., 2011: A new record of last interglacial conditions at the Arctic periphery. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Baustian, T., 2011: About IFM-GEOMAR and Ni-

trous Oxide in the Ocean. Instituto del Mar del Peru, Lima, Peru, 23.05.2011.

Behrens, E., **Biastoch, A.** and **Böning, C.W.**, 2011: The impact of eddy processes on the freshwater distribution and AMOC in Greenland melting scenarios. THOR 3rd Annual Meeting, Bergen, Norway, 09.-11.11.2011.

Behrens, E., **Böning, C.W.** and **Biastoch, A.**, 2011: Can eddies affect the freshwater distribution and the reaction of the MOC in Greenland melting scenarios? EGU General Assembly, Vienna, Austria, 05.04.2011.

Behrmann, J. H. and **Meissl, S.**, 2011: Submarine slides, Gulf of Mexico continental slope: insights into transport processes from fabrics and geotechnical data. IGCP585 - 5. International Symposium, Submarine Mass Movements and Their Consequences, Kyoto, Japan, 24.-26.10.2011.

Behrmann, J. H., **Planert, L.** and Jokat, W., 2011: Tectonic evolution of Walvis Ridge, offshore Namibia: evidence from reflection seismic and high-resolution bathymetric data. GeoMunich 2011 Fragile Earth, Geological Processes from Global to Local Scales, München, 04.-07.09.2011.

Behrmann, J. H., **Stipp, M.** and **Ullemeyer, K.**, 2011: Textural, structural and elastic wave velocity models for involved geophysical imaging of subduction zones. STI 2011 (Stress and Texture Investigations by Means of Neutron Diffraction), Dubna, Russia, 06.-09.06. 2011.

Bertics, V. J., **Sommer, S.**, **Dale, A. W.**, Teupe, M. and **Treude, T.**, 2011: Benthic nitrogen and sulfur dynamics of a seasonally hypoxic region of the Baltic Sea, Eckernförde Bay. 2011 ASLO Aquatic Sciences Meeting, San Juan, Puerto Rico, USA, 13.-18.02.2011.

Bertics, V. J., **Sommer, S.**, **Dale, A. W.**, and **Treude, T.**, 2011: Benthic Nitrogen and Sulfur Dynamics of Eckernförde Bay. Boknis Eck Time Series Workshop, IFM-GEOMAR, Kiel, 10.05.2011.

Bertics, V. J., Sommer, S., Dale, A. W., Schmitz-Streit, R. and Treude, T., 2011: Nitrogen Fixation in Sediments Beneath Oxygen Minimum Zones. ISEB XX 2011 Frontiers in Biogeochemistry, Istanbul, Turkey, 22.-27.09.2011.

Bertics, V. J., Löscher, C., Salonen, I., Schmitz-Streit, R., Lavik, G., Kuypers, M. M., and Treude, T., 2011: Nitrogen Fixation by Sulfate-Reducing Bacteria in Coastal and Deep-Sea Sediments. AGU Fall Meeting, San Francisco, USA, 07.12.2011.

Biastoch, A., 2011: Agulhas Leakage and the Variability of the Atlantic Meridional Overturning Circulation. RAPID - USA MOC International Science Meeting, Bristol, UK, 12.-15.07.2011.

Bittig, H. C. and Körtzinger, A., 2011: Laboratory calibration setup based on an electrochemical O₂ generator. ARGO Oxygen Meeting, Brest, France, 25.-27.05.2011.

Bittig, H. C. and Körtzinger, A., 2011: Temperature-dependent step response characteristic of Aanderaa oxygen optodes. ARGO Oxygen Meeting, Brest, France, 25.-27.05.2011.

Blanchet, C., Lorenzen, J., Tjallingii, R., Schouten, S. and Frank, M., 2011: Response of vegetation and erosion dynamics to changes in precipitation in the Nile River drainage basin during the African Humid Period. Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Bluhm, K., Croot, P., Wuttig, K. and Lochte, K., 2011: Cell Permeability/Senescence Controls the Reduction Rate of Iodate to Iodide in Marine Phytoplankton. Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Bohlen, L., Sommer, S., Dale, A., Hensen, C. and Wallmann, K., 2011: Sediments underlying the Peruvian oxygen minimum zone – source or sink for reactive nitrogen species?. 2011 ASLO Aquatic Sciences Meeting, San Juan, Puerto Rico, 13.-18.02.2011.

Bracher, A., Dinter, T., Taylor, B., Sadeghi, A., Quack, B. and Torrecilla, E., 2011: Phytoplank-

ton composition and distribution in the Western Pacific – insights on temporal and spatial dynamics from in-situ and satellite data. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Brandt, P., 2011: Tropical Atlantic Climate Experiment. Workshop on Coupled Ocean-Atmosphere-Land Processes in the Tropical Atlantic, University of Miami, Miami, USA, 23.03.2011.

Brandt, P., Funk, A., Hormann, V., Dengler, M., Greatbatch, R. J. and Toole, J. M., 2011: A 4.5-year climate cycle of the tropical Atlantic forced by deep equatorial ocean dynamics?. PI-RATA-16/TACE/TAV Joint Meeting, Fernando de Noronha, Brazil, 16.03.2011.

Brandt, P., Funk, A., Hormann, V., Dengler, M., Greatbatch, R. J. and Toole, J. M., 2011: A 4.5-year climate cycle of the tropical Atlantic forced by deep equatorial ocean dynamics?. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Brandt, P., Funk, A., Hormann, V., Dengler, M., Greatbatch, R. J. and Toole, J. M., 2011: Interannual atmospheric variability forced by the deep equatorial Atlantic Ocean. NOAA-AOML Seminar, Miami, USA, 21.03.2011.

Brandt, P., Funk, A., Hormann, V., Dengler, M., Greatbatch, R. J. and Toole, J. M., 2011: Interannual atmospheric variability forced by the deep equatorial Atlantic Ocean. WHOI Seminar, Woods Hole, USA, 27.10.2011.

Bredemeyer, S., Hansteen, T.H., Garofalo, K., Mora Stock, C., Rabbel, W., Gil Cruz, F., 2011: Remote Sensing Of Thermal Emission And Degassing At Villarrica Volcano, Chile. AGU Fall Meeting 2011, 05.-09.12.2011, San Francisco, USA.

Bumke, K. and Macke, A., 2011: Physical processes of surface near freshwater transport from atmospheric in-situ observations. SMOS-Forschergruppen-Treffen, ZMAW, Hamburg, 24.06.2011.

Burwicz, E., Rüpkke, L. and Wallmann, K., 2011: A new global gas hydrate budget based

on numerical reaction-transport modeling and a novel parameterization of Holocene and Quaternary sedimentation. In: Proceedings of the 7th International Conference on Gas Hydrates (ICGH 2011), Edinburgh, Scotland, United Kingdom, 17.-21.07.2011.

Böning, C. W., 2011: Dynamical causes of multi-decadal sea level trends in the tropical Indian Ocean. CSIRO Centre for Marine and Atmospheric Research, Aspendale, Australia, 06.12.2011.

Böning, C. W., 2011: Spatial distribution of global sea level rise: role of ocean dynamics. Konsortium Deutsche Meeresforschung/Deutsches Klima Konsortium Workshop „Rolle der Ozeandynamik im Klimasystem“, Hamburg, 13.05.2011.

Böning, C. W., Behrens, E. and Müller, K., 2011: Manifestation of multi-decadal AMOC changes in the transport of the Florida Current. RAPID - USA MOC International Science Meeting, Bristol, UK, 12.-15.07.2011.

Böning, C. W. and Oschlies, A., 2011: High-resolution modelling of physical-biogeochemical interactions in the tropical ocean. International Conference of SFB 754, Lübeck, 21.02.2011.

Böttger-Schnack, R. and Schnack, D., 2011: Identification key for species groups of the pelagic copepod family Oncaeidae in the world ocean. 11. International Conference on Copepoda, Merida, Mexico, 11.07.2011.

Büdenbender, J., 2011: Coralline red algae calcification. Seminar series on the mechanisms of biomineralization, IFM-GEOMAR, Kiel, 28.02.1022.

Büdenbender, J. and Riebesell, U., 2011: Ocean acidification effects on North Atlantic pteropods during the Bergen KOSMOS Experiment 2011. BIOACID Annual Meeting 2011, Bremen, 26.-30.09.2011.

Chen, J., Jegen-Kulcsar, M., Moorkamp, M. and Heincke, B., 2011: Using Empirical Mode Decomposition (EMD) for the processing of mari-

ne MT data. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Chen, T., Frank, M. and Spielhagen, R. F., 2011: Hf-Nd isotope variations of late Cenozoic Arctic intermediate water reflect continental weathering. Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Chuang, P. C., Yang, T. F., **Dale, A. W., Wallmann, K.**, Lin, S., Wang, Y. and Chung, S. H., 2011: Estimation of advective methane flux in gas hydrate potential area offshore SW Taiwan and its tectonic implications. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Clemmesen, C., Caldarone, E. M., Buckley, L. J., **Voss, R. and Hinrichsen, H. H.**, 2011: Effects of photoperiod and temperature on recent growth rates of sprat larvae in the Baltic Sea. ICES Annual Science Conference, Gdansk, Poland, 21.09.2011.

Clemmesen, C., Dupont, S., Fine, M., Gazeau, F., **Piatkowski, U.**, Pörtner, H. O., Thorndyke, M. and Widdicombe, S., 2011: Sensitivity of animal life-stages to ocean acidification – a review. EPOCA Third Annual Meeting, Royal Academy of Belgium for Science and the Arts, Brussels, Belgium, 09.-13.05.2011.

Clemmesen, C., Frommel, A., Franke, A., Maneja, R., Lowe, D., Geffen, A., Folkvord, A., **Malzahn, A., Schubert, A. S. and Piatkowski, U.**, 2011: How do commercially important fish species cope with ocean acidification?. 35. Annual Larval Fish Conference, Wilmington, NC, USA, 22.-26.05.2011.

Clemmesen, C., Frommel, A., Maneja, R., Geffen, A., Folkvord, A., Lowe, D., **Malzahn, A. and Piatkowski, U.**, 2011: Ocean Acidification effects on commercially important fish species. 2. Annual Meeting of BIOACID, Bremen, 26.-30.09.2011.

Clemmesen, C., Mempel, H., Peschutter, J., **Paulsen, M.**, Donner, M., Stransky, J., **Stuhr, A.**,

Lehmann, A. and Petereit, C., 2011: Effect of warmer winter temperature on the match/mismatch of fish larvae and their prey – a field study in Kiel Fjord. Workshop on herring recruitment ecology, vTI-OSF Rostock, Rostock/Warnemünde, 21.02.2011.

Condon, R. H., Pitt, K. A., Duarte, C. M., Graham, W. M., Lucas, C., Robinson, K., **Lebrato, M.**, Carlson, C. A. and del Giorgio, P. A., 2011: Exploring the paradigm of a global expansion in jellyfish blooms: implications for biogeochemical cycles and food webs in a changing ocean. ASLO Aquatic Sciences Meeting, San Juan, Puerto Rico, USA, 13.-18.02.2011.

Cronin, T. M., Dwyer, G. S., Briggs, W. M. J., Farmer, J., **Bauch, H. A.**, Jakobsson, M., **Spielhagen, R. F.** and Stepanova, A., 2011: Arctic Ocean Temperature History since 60 ka based on ostracode Mg/Ca ratios. 5. APEX Workshop, Longyearbyen, Svalbard, Norway, 01.-04.06.2011.

Croot, P., Baars, O., Bluhm, K., Dammshäuser, A., Heller, M., Schlosser, C., Streu, P. and Wuttig, K., 2011: Transient redox species as tracers of oceanographic mixing and transport. 43th International Liège Colloquium on Ocean Dynamics Tracers of physical and biogeochemical processes, past changes and ongoing anthropogenic impacts, Liege, Belgium, 02.-06.05.2011.

Cukur, D., Krastel, S. and Winkelmann, D., 2011: Sedimentary processes in Lake Van: first results from a joint interpretation of seismic and drilling data. 1. PALEOVAN Post Drill Science Meeting, Zurich, Switzerland, 05.-06.09.2011.

Czeschel, R., Stramma, L., Funk, A. and Karstensen, J., 2011: Middepth circulation of the eastern tropical South Pacific and its link to the oxygen minimum zone from ARGO oxygen floats. ARGO Oxygen Meeting, Brest, France, 25.-27.05.2011.

Dale, A. W., 2011: Isolating the trigger for methane gas formation in post-glacial sediments in

Aarhus Bay: insights from a modeling study. Center for Geomicrobiology, Aarhus University, Aarhus, Denmark, 09.02.2011.

Dale, A. W., 2011: Modeling the nitrogen cycle in Boknis Eck sediments. Boknis Eck Time Series – Workshop, IFM-GEOMAR, Kiel, 10.05.2011.

Dammshäuser, A., Wagener, T., Gaiero, D., Heller, M., **Streu, P.** and Croot, P. L., 2011: Atmospheric supply of Al, Fe and Ti to the Atlantic Ocean. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

De Vernal, A., Hillaire-Marcel, C., Fréchette, B., **Van Nieuwenhove, N., Bauch, H. A.** and Eynaud, F., 2011: The last interglacial in the northern North Atlantic and adjacent areas: evidence for a more zonal climate than during the Holocene. EGU General Assembly 2011, Vienna, Austria, 07.04.2011.

Demir, N., **Kopp, H., Flueh, E. R., Klaeschen, D., Weinzierl, W.**, Hirn, A. and Laigle, M., 2011: The Sedimentary Sequences of the Lesser Antilles Arc South of Guadeloupe From Wide-Angle and Reflection Seismic Data. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Devey, C., Mahlke, J., Petersen, S., Laurila, T. and Hannington, M. D., 2011: Volcanism, hydrothermalism and tectonics of the Woodlark Basin. GAC-MAC Joint Annual Meeting, Ottawa, Canada, 27.05.2011.

Devey, C. W., Behrmann, J. H., Brandl, P., Hannington, M., **Lackschewitz, K.**, Laurila, T., **Klaucke, I., Mahlke, J.**, Nagel, T., **Petersen, S., Riepenhausen, I., Rothenbeck, M., Speckbacher, R., Sticklus, J., Theissen, S. and Westhues, A.**, 2011: Vulkanische Bauten entlang der Woodlark-Spreizungsachse, Papua Neuguinea. Statusseminar Meeresforschung mit FS Sonne 2011, Hannover, 09.-10.02.2011.

Diekmann, B., Andreev, A., Henning, D., Hubberten, H. W., Krinner, G., Lehmkuhl, F., Meyer, H., Müller, S., Nazarova, L., Pestryakova, L., Popp-

Hofmann, S., Siegert, C., Stauch, G., Subetto, D., Tarasov, P. and **Werner, K.**, 2011: Late Quaternary Landscape and Climate Dynamics of the Verkhoyansk Mountains, eastern Siberia. 5. APEX Workshop, Longyearbyen, Svalbard, Norway, 01.-04.06.2011.

Diekmann, B., Bleibtreu, A., Chaplignin, B., de Hoog, V., Dirksen, O., Dirksen, V., Hoff, U., Hubberten, H. W., Kopsch, C., Meyer, H., Nazarova, L. and **van den Bogaard, C.**, 2011: Holocene palaeoenvironment on Kamchatka. KALMAR - Second Bilateral Workshop on Russian-German Cooperation on Kurile-Kamchatka and Aleutian Marginal Sea-Island Arc Systems, Trier, 16.-20.05.2011.

Dierking, J., Brunke, M. and **Eizaguirre, C.**, 2011: The houting population of the Treene River: genetics and ecology. International conference on the restoration of streams with special emphasis on the houting and the Houting Project, Tonder, Denmark, 03.-05.10.2011.

Dierking, J., Praebel, J., Borchering, M., Brunke, C. and **Eizaguirre, C.**, 2011: The return of the houtings: genetics and ecology of anadromous whitefishes in Germany. 11. International Symposium on the Biology and Management of Coregonid Fishes, Mondsee, Austria, 26.-30.09.2011.

Dirksen, O., **van den Bogaard, C.**, Danhara, T. and Diekmann, B., 2011: Holocene terraces and landslide events in northern and southern Kamchatka: evidence of sharp tectonic and volcanic unrest at 2800-2900 ¹⁴C BP. KALMAR - Second Bilateral Workshop on Russian-German Cooperation on Kurile-Kamchatka and Aleutian Marginal Sea-Island Arc Systems, Trier, 16.-20.05.2011.

Djordje, G., **Stipp, M.** and Wooden, J., 2011: Thermometry of Quartz Mylonites: Importance of dynamic recrystallization on Ti-in-quartz re-equilibration. 18. Conference on Deformation Mechanisms, Rheology and Tectonics, DRT 2011 Meeting, Oviedo, Spain, 31.08.-02.09.2011.

Dullo, W. C., Baranov, B. and **van den Bogaard, C.**, 2011: Kurilen-Kamtschatka und randliche Aleuten Inselbogen Systeme: Geodynamische und klimatische Wechselwirkungen in Raum und Zeit: Überblick über die Ausfahrten SO201-KALMAR. Statusseminar Meeresforschung mit FS Sonne 2011, Hannover, 09.-10.02.2011.

Dullo, W.-Chr., 2011: Volcanoes, bears and salmon: geological investigations on and off Kamchatka. Lebende Ausstellung: Brennpunkte der deutsch-russischen Zusammenarbeit auf dem Gebiet der Meeres- und Polarforschung, St. Petersburg, 25.10.2011.

Duteil, O., Kriest, I., Khatiwala, S. and **Oschlies, A.**, 2011: Coupling of a complex biogeochemical model with the Transport Matrix Method: quantification of the impact of margin iron input on the ecosystem. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Eggers, S. L. and **Matthiessen, B.**, 2011: Initial dominance in coccolithophore communities effects community structure but does not translate into community functioning. World Conference of Marine Biodiversity, Aberdeen, UK, 26.-30.09.2011.

Ehlert, C., Grasse, P. and **Frank, M.**, 2011: Changes in silicate utilization and upwelling intensity off Peru since the LGM - insights from silicon and neodymium isotopes. Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Ehlert, C., Grasse, P. and **Frank, M.**, 2011: Changes in silicate utilization and upwelling intensity off Peru since the LGM - insights from silicon isotopes. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Eisenhauer, A., Böhm, F., Vollstaedt, H., Liebetrau, V., Fietzke, J., Kisakurek, B. and Erez, J., 2011: Strontium isotope fractionation and its application in Earth system sciences. Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Endres, S., Unger, J., Wannicke, N., Nausch, M., Voss, M., and **Engel, A.**, 2011: Microbial degradation of organic matter produced by *Thalassiosira weissflogii* during a combined chemostat and batch experiment under different pCO₂ levels. SAME12 - 12th Symposium on Aquatic Microbial Ecology, Rostock/Warnemünde, 28.08.-02.09.2011.

Evain, M., Galve, A., Charvis, P., Laigle, M., Ruiz, M., **Kopp, H.**, Hirn, A. and **Flueh, E.**, 2011: Structure and seismic activity of the Lesser Antilles subduction zone. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Fiedler, B., Stiebens, V., Kanzow, T. and Eizaguirre, C., 2011: Animal-Borne Oxygen Measurements on Loggerhead Turtles - An Interdisciplinary Research Project at Cape Verde. MASTS Workshop on Fluorometry, Chlorophyll and Oxygen measurements from Animal-borne platforms, St. Andrews, Scotland, 03.-04.10.2011.

Fietzek, P., 2011: Measuring dissolved gases (CO₂ and CH₄) with the HydroC™ in flow-through applications and on other platforms - Past measurements and future advancements. Ferrybox Workshop 2011 FerryBoxes as Part of Operational Observation Networks: Monitoring versus Scientific Aspects, Geesthacht, 01.-02.09.2011.

Fietzek, P., 2011: Underwater pCO₂ measurements by means of a membrane based NDIR sensor - The HydroC™/CO₂. OceanBusiness 2011, National Oceanography Center, Southampton, UK, 05.-07.04.2011.

Fietzek, P., Kramer, S. and Esser, D., 2011: Integrating sensors for dissolved gas concentrations (CO₂ and CH₄) into modern measuring platforms. 5th EGO Meeting and Glider School, Las Palmas, Gran Canary, Spain, 14.-18.03.2011.

Fischer, M., Rickert, E., Wahl, M. and Friedrichs, G., 2011: Design and field application of an optical fiber biofilm sensor. 1. International Conference on Marine Resources and Beyond, Bremerhaven, 05.-07.09.2011.

Fischer, M., Rickert, E., Wahl, M. and Friedrichs, G., 2011: Design and field application of an optical fiber biofilm sensor. 1. International Conference on Marine Resources and Beyond, Bremerhaven, 05.-07.09.2011.

Fischer, M., Rickert, E., Wahl, M. and Friedrichs, G., 2011: Design and field application of an optical fiber biofilm sensor. 1. International Conference on Marine Resources and Beyond, Bremerhaven, 05.-07.09.2011.

Flury, S., Fossing, H., Røy, H., Jensen, J. B., **Dale, A. W.** and Jørgensen, B. B., 2011: Geochemical dynamics along a transect of gas-free and gas charged sediments – A detailed study in Aarhus Bay. 8th Baltic Sea Science Congress, St. Petersburg, Russia, 22.-26.08.2011.

Form, A., 2011: Einfluss des anthropogenen Klimawandels auf die Ökophysiologie der Kaltwasserkoralle *Lophelia pertusa*. FB2 Seminar, Leibniz-Institute of Marine Sciences (IFM-GEOMAR), Kiel, 17.01.2011.

Frank, M., Grasse, P., Stichel, T. and Stramma, L., 2011: Distribution of neodymium isotopes in Eastern Equatorial Pacific seawater. Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Froese, R., 2011: And How Are the Fish? An Evaluation of Certified Seafood. Pew Fellows Meeting, Key Largo, Florida, USA, 23.10.2011.

Froese, R., 2011: Ecomknows WP6 Progress Report. ECOMKNOWS WP6, Cadiz, Spain, 23.11.2011.

Froese, R., 2011: Fischerei an der Grenze zum Kollaps. Velvian workshop about nutrition during pregnancy, Madrid, Spain, 17.09.2011.

Froese, R., 2011: Früher war mehr Fisch.... Panel discussion at Maritimer Abend in the context of the European Fish Week, Berlin, 04.-12.06.2011.

Froese, R., 2011: Recent trends in Global and European Fisheries. Bio-Resources from Oceans - Interdisciplinary Workshop, Berlin, 28.-29.11.2011.

Froese, R., 2011: Reform of the Common Fisheries Policy of Europe. Round table discussion with the fisheries committee in the Dutch Parliament, Le Hague, Netherlands, 29.09.2011.

Froese, R., 2011: Richtlinien für die Zertifizierung von Wildfisch. BNN Expertenhearing zur Zertifizierung von Wildfisch, Fulda, 14.03.2011.

Froese, R., 2011: Status quo and current challenges of AquaMaps. FishBase Mini-Symposium 2011: Biogeographic modelling in FishBase, Na-

turhistoriska riksmuseet (NRM), Stockholm, Sweden, 05.09.2011.

Froese, R., 2011: Und wo ist der Kabeljau? Zur Reform der Gemeinsamen Fischereipolitik in Europa. Fair Oceans Tagung: Wem gehört der Fisch?, Bremerhaven, 18.10.2011.

Frommel, A., Maneja, R., Geffen, A., Folkvord, A., Lowe, D., **Malzahn, A., Piatkowski, U.** and **Clemmesen, C.**, 2011: Ocean Acidification: A Problem for Fish?. 2011 ASLO Aquatic Sciences Meeting, San Juan, Puerto Rico, 13.-18.02.2011.

Fuhlbrügge, S., Krüger, K., Quack, B., Atlas, E., **Hepach, H.** and **Wittke, F.**, 2011: VLS measurements in the tropical East Atlantic. Shiva annual meeting 2011, Leeds, UK, 14.07.2011.

Gallais, F., Gutscher, M. A., Graindorge, D., Chamot-Rooke, N. and **Klaeschen, D.**, 2011: The structure and recent deformation of the external Calabrian Arc (accretionary wedge): implications for regional hazard assessment. GeoMunich 2011 Fragile Earth, Geological Processes from Global to Local Scales, München, 06.09.2011.

Gattacceca, J. C., Galy, A., Piotrowski, A. M. and **Frank, M.**, 2011: Changes in Neogene Himalayan erosion regime: Input of Pb and Nd isotopes into the Indian Ocean. Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Geersen, J., Behrmann, J. H., Völker, D., Weinrebe, W., Krastel, S. and Reichert, C., 2011: Upper plate control on segmentation of the 1960 Great Chile and the 2010 Maule earthquakes. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Gemmell, J. B., **Petersen, S.**, Monecke, T. and Hannington, M. D., 2011: Palinuro, a high to intermediate sulfidation, shallow marine, hydrothermal system in the southeastern Tyrrhenian Sea, Italy. GAC-MAC Joint Annual Meeting, Ottawa, Canada, 27.05.2011.

Gilbert, D., Freundt, A., Kutterolf, S., Burkert, C. and Garbe-Schönberg, D., 2011: Mag-

matic evolution and volatile inventory of the Lonquimay volcano, South Central Chile. XXV IUGG General Assembly, Session V05, Melbourne, Australia, 28.06.-07.07.2011.

Gilbert, D., Freundt, A., Kutterolf, S., Hansteen, T., Amigo, A. and **Burkert, C.**, 2011: Magma chamber conditions (P, T, volatiles) of the June 2011 eruption of the Puyehue-Cordon Caulle volcanic complex, South Central Chile. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Gilbert, D., Freundt, A., Kutterolf, S. and Schindlbeck, J., 2011: Llaima, Lonquimay and Puyehue magmatic systems - a comparative attempt. SFB574 Retreat, Sankelmark, 01.-02.10.2011.

Grasse, P., Ehlert, C., Ryabenko, E. and **Frank, M.**, 2011: Silicon isotopes as a tracer for silicate utilization in the Peruvian upwelling. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Greatbatch, R., 2011: On the dynamics of the Gulf Stream Extension region. Institut für Umweltphysik, Universität Bremen, Bremen, 12.05.2011.

Greatbatch, R., 2011: On the dynamics of the Gulf Stream Extension region. National Oceanography Centre, Liverpool, Liverpool, UK, 05.01.2011.

Greatbatch, R. J., 2011: Factors influencing northern hemisphere winter mean atmospheric circulation anomalies, 1960/61-2001/02. School of Atmospheric Sciences, Nanjing University, Nanjing, China, 29.12.2011.

Greatbatch, R. J., 2011: Factors influencing northern hemisphere winter mean atmospheric circulation anomalies, 1960/61-2001/02. Nanjing University of Information, Science and Technology, Nanjing, China, 30.12.2011.

Greatbatch, R. J., 2011: On the dynamics of the Gulf Stream Extension region. Alfred Wegner Institut für Polar und Meeresforschung, Bremerhaven, 20.10.2011.

Greatbatch, R. J., 2011: On the dynamics of the Gulf Stream Extension region. School of Atmospheric Sciences, Nanjing University, Nanjing, China, 26.12.2011.

Greatbatch, R. J., 2011: The meridional overturning circulations of the ocean and the atmosphere. School of Atmospheric Sciences, Nanjing University, Nanjing, China, 31.12.2011.

Grevemeyer, I., Flueh, E. R., Contreras-Reyes, E., Watts, A. B., Frost, D., Peirce, C., **Dannowski, A., Möller, S., Papenberg, C. and Planert, L.**, 2011: Seismische Lücken, Gefährdungspotential, und Steuerungsmechanismen: Ergebnisse von SO195, Subduktionszone von Tonga . Statusseminar Meeresforschung mit FS Sonne 2011, Hannover, 09.-10.02.2011.

Grevemeyer, I., Flueh, E. R. and Dannowski, A., 2011: Rupture zone of the Mw=8.8 2010 Maule earthquake constrained by aftershock seismicity and teleseismic moment tensor inversion of large aftershocks. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Grevemeyer, I., Flueh, E. R., Dannowski, A., Lefeldt, M., Leuchters, W., Möller, S., Behrmann, J. H., Barrantes, S., Comte, D., Contreras-Reyes, E. and Vera, E., 2011: Nachbebenaktivität des M8.8 Chile Seebebens vom 27 Februar 2010 abgeleitet aus Ozean-Boden-Seismometer-Daten: Datenqualität und erste Ergebnisse der SONNE-Reisen SO209/2 und SO212. Statusseminar Meeresforschung mit FS Sonne 2011, Hannover, 09.-10.02.2011.

Grevemeyer, I., Ranero, C. R., Leuchters, W., Pesquer, D., Booth-Rea, G. and Gallart, J., 2011: Seismic constraints on the nature of crust in the Algerian-Balearic Basin – implications for lithospheric construction at back-arc spreading centres. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Gurova, E. and **Lehmann, A.**, 2011: Combined SAR/IR satellite data and circulation model anal-

ysis of upwelling in the Baltic Sea. 8th Baltic Sea Science Congress, St. Petersburg, Russia, 24.08.2011.

Haeckel, M., 2011: Sequestrierung von CO₂ in marinen Sedimenten: Geochemische Einsichten in das natürliche Labor Yonaguni Knoll im südlichen Okinawa Trog. Statusseminar Meeresforschung mit FS Sonne 2011, Hannover, 09.-10.02.2011.

Hammann, M., Boo, S. M., Wang, G. and **Weinberger, F.**, 2011: Stress resistance: Both a precondition for and a consequence of seaweed invasion. 7. International Conference on Marine Bioinvasions, Barcelona, Spain, 23.-25.08.2011.

Hanel, R., **Reiser, S.**, Würtz, S., **Schröder, J.** and Kloas, W., 2011: The effects of seawater ozonation on animal welfare of juvenile turbot (*Psetta maxima*) in recirculation aquaculture. World Aquaculture Conference 2011, Natal, Brazil, 06.-10.06.2011.

Hannington, M., Jamieson, J., Monecke, T. and **Petersen, S.**, 2011: Estimating the metal potential of SMS deposits. IEEE Ocean11 Conference, Hawaii, 21.09.2011.

Hansteen, T.H., Bredemeyer, S., Garofalo, K., Mora Stock, C., Rabbal, W., Dzierma, Y., Bataille, K., Peña, P., Gil Cruz, F., 2011: Gas monitoring and seismicity at Villarrica Volcano, South-Central Chile. CCVG – IAVCEI 11th Gas Workshop, Kamchatka, Russia, 01.-10.09.2011.

Harders, R., Ranero, C. and **Weinrebe, R. W.**, 2011: An overview of the role of long-term tectonics and incoming plate structure on segmentation of submarine mass wasting phenomena along the Middle America Trench. IGCP585 – 5. International Symposium on Submarine Mass Movements and Their Consequences, Kyoto, Japan, 24.-26.10.2011.

Harders, R., Ranero, C. R. and Weinrebe, W., 2011: Submarine mass wasting processes along slopes influenced by long-term tectonic erosion: the Middle America Trench. AGU Fall Meeting

2011, San Francisco, USA, 05.-09.12.2011.

Haslob, H., Huwer, M. and Schaber, M., 2011: Leidy in the Bornholm Basin, Baltic Sea: Seasonal phenology, hydrographic influence on spatiotemporal distribution and overlap with ichthyoplankton. 2. DTU Aqua Jelly Day, Copenhagen, Denmark, 10.10.2011.

Haslob, H., Peck, M. A., **Clemmesen, C., Peterreit, C.** and Kraus, G., 2011: The impact of climate change on Baltic sprat population dynamics – a matrix model approach. ICES Annual Science Conference 2011, Gdansk, Poland, 19.-23.09.2011.

Hauff, F., Hoernle, K., van den Bogaard, P., Werner, R., Kipf, A., Conrad, S., Garbe-Schönberg, D. and Barckhausen, U., 2011: SO199 CHRISP (Christmas Island Seamount Provinz und der Investigatorrücken): Alter und Geochemie einer enigmatischen Seamount Provinz. Statusseminar Meeresforschung mit FS Sonne 2011, Hannover, 09.-10.02.2011.

Haynert, K., 2011: Biomineralization in Foraminifera. Seminar – Biomineralisierung, CAU Kiel, Kiel, 24.01.2011.

Hegglin, M. I. and **Tegtmeier, S.**, 2011: SPARC Data Initiative – Intercomparison of vertically resolved chemical trace gas and aerosol climatologies. SPARC SSG meeting, Pune, India, 03.02.2011.

Heim, B., Overduin, P., Lantuit, H., Günther, F., Hölemann, J., Doerffer, R., **Wegner, C.** and Loginova, A., 2011: OCOC – From Ocean Colour to Organic Carbon – a contribution to ESA CoastColour. 3rd CoastColour User Consultation Meeting, Libon, Portugal, 19.-20.10.2011.

Heller, M. and Croot, P., 2011: The impact of Superoxide (O₂⁻) on trace metal redox cycles and the reactivity with dissolved organic matter. 43th International Liège Colloquium on Ocean Dynamics Tracers of physical and biogeochemical processes, past changes and ongoing anthropogenic

impacts, Liege, Belgium, 02.-06.05.2011.

Helmke, H., Quack, B., Atlas, E., Krüger, K., Bracher, A., Fuhlbrügge, S., Wittke, F., Bange, H. W., and Wallace, D. W. R., 2011: Diurnal variations of halocarbons in and above the tropical Atlantic. EGU General Assembly 2011, Vienna, Austria, 05.04.2011.

Hensen, C., Scholz, F., Reitz, A., Liebetrau, V., Haeckel, M., Schmidt, M., Wallmann K., and Romer, R. L., 2011: Geochemistry of cold seeps - Fluid sources and systematic. Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Hepach, H., Quack, B., Atlas, E., Wittke, F., Raimund, S., Bange, H. and Körtzinger, A., 2011: Halocarbons in and above the tropical Atlantic. SOLAS Summer School, Corsica, France, 29.08-10.09.2011.

Hepach, H., Quack, B., Atlas, E., Krüger, K., Bracher, A., Fuhlbrügge, S., Wittke, F., Bange, H. and Wallace, D. W. R., 2011: Diurnal variations of halocarbons in and above the tropical Atlantic. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Herms, P., John, T., Bakker, R. J. and Schenk, V., 2011: Fluid and trace element migration in subducted oceanic rocks from Ecuador. Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Herms, P., Schenk, V., Holzheid, A., Halama, R., Baese, R. and Mutter, A., 2011: Processes deep in the subduction zone. SFB574 Retreat - Subproject C1, Sankelmark, 07.-08.09.2011.

Hetzinger, S., Pfeiffer, M., Dullo, W. C., Zinke, J. and Garbe-Schönberg, D., 2011: Sr/Ca and stable isotopes in a coral from the Venezuelan coast: a record of 20th-century changes in SST, SSS and cloud cover?. AGU Fall Meeting 2011, San Francisco, Calif., USA, 05.-09.12.2011.

Heuer, L., Frank, M. and Eisenhauer, A., 2011: Neodymium als Tracer für Wassermannen: Konzen-

trationen und Isotopenzusammensetzungen im östlichen äquatorialen Pazifik. Statusseminar Meeresforschung mit FS Sonne 2011, Hannover, 09.-10.02.2011.

Heydolph, K., Geldmacher, J. and Hoernle, K., 2011: The origin of an oceanic plateau: Isotope geochemistry (Sr, Nd, Pb and Hf) of volcanic rocks from IODP Site U1347 and ODP Site 1213 (Hf data) on the Shatsky Rise (Northwest Pacific). AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Hieronimi, M., 2011: A different approach for Monte Carlo radiative transfer simulations - Proposal for underwater light fluctuations. Meteorologie Seminar, Kiel, 27.01.2011.

Hieronimi, M. and Macke, A., 2011: Solar Radiative Transfer into the Ocean: Irradiance Variability in the Mixed Layer. P.P. Shirshov Institute of Oceanography, Moscow, Russia, 23.11.2011.

Hieronimi, M. and Macke, A., 2011: Wave-induced irradiance variability in the upper ocean. 2nd EOS Topical Meeting on „Blue“ Photonics - Optics in the Sea, Bremerhaven, 05.-07.09.2011.

Hindle, D. and **Kopp, H.,** 2011: Coupled fluid flow and deformation in sedimentary basins over geological timescales: A numerical modelling approach for accretionary prisms. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Hinrichsen, H. H., Hüsey, K. and Huwer, B., 2011: How do hydrodynamics and hydrography affect the survival of western Baltic cod early life stages?. Baltic Sea Science Conference 2011, St. Petersburg, Russia, 22.-26.08.2011.

Hinrichsen, H. H., Hüsey, K. and Huwer, B., 2011: The impact of hydrodynamics and hydrography on western Baltic cod early life stage survival?. ICES Annual Science Conference 2011, Gdansk, Poland, 19.-23.09.2011.

Hinrichsen, H. H., von Dewitz, B., Piatkowski, U. and Clemmesen, C., 2011: Baltic cod: Survival and reproduction at extreme pH levels. CAREX

Conference on Life in Extreme Environments, Dublin, Ireland, 18.-20.10.2011.

Hoernle, K., Hauff, F., Werner, R., Hanan, B., Christie, D., Herbrich, A., Maicher, D. and Garbe-Schönberg, D., 2011: SO208 Leg 2 (PLUME-FLUX) und SO158 (MEGAPRINT): Neue Erkenntnisse über Plume-Rücken-Wechselwirkungen zwischen dem Galápagosplume und dem Cocos- Nazca-Spreizungszentrum . Statusseminar Meeresforschung mit FS Sonne 2011, Hannover, 09.-10.02.2011.

Hoernle, K., Hauff, F., Werner, R., van den Bogaard, P., Conrad, S., Gibbons, A. and Müller, D., 2011: The Christmas Island Seamount Province, Indian Ocean: Origin of Intraplate Volcanism by Shallow Recycling of Continental Lithosphere?. Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Hoernle, K., Jacques, G., Wehrmann, H., Dzierma, Y., Garbe-Schönberg, D., van den Bogaard, P., Lara, L., Völker, D., Kutterolf, S. and Iyer, K., 2011: Geochemical, Geophysical and Morphological Results from the Chilean Southern Volcanic Zone: The Role of Fluids in Generating the Highest Magmatic Output. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Hummels, R., Dengler, M. and Bourles, B., 2011: On the variability of diapycnal mixing in the eastern equatorial Atlantic. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Hübscher, C., Deghani, G. A., Erhardt, A., Hall, J., **Jegen, M.,** Mechie, J. and Weber, M., 2011: Incipient Continent-Continent Collision between the Eratosthenes Seamount and Cyprus / Eastern Mediterranean. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Iglesias-Rodriguez, M. D., Jones, B. M., **Lebrato, M.** and Blanco-Ameijeiras, S., 2011: The effect of upwelling and in-situ ocean acidification manipulations on coccolithophore physiology. ASLO Aquatic Sciences Meeting, San Juan, Puerto Rico,

USA, 13.-18.02.2011.

Iglesias-Rodriguez, M. D., Jones, B. M. J., Blanco-Ameijeiras, S., **Lebrato, M.** and Huete-Ortega, M., 2011: The future of marine calcification: Observations of acclimation and adaptation to past and future marine chemistry. 5. European Phyco-logical Congress: Molecular and cellular responses in algae induced by changes in the environment", Rhodes, Greece, 04.-09.09.2011.

Jacques, G., Hoernle, K., Wehrmann, H., Garbe-Schönberg, D., **van den Bogaard, P., Hauff, F.** and Lara, L., 2011: Along-Arc geochemical variations in the Southern Volcanic Zone, Chile. Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Jegen, M., Hölz, S., Swidinsky, A. and Brückmann, W., 2011: Quantification of marine sulfide deposits using marine electromagnetic methods. OCEANS '11 MTS/IEEE Kona, Kona, Hawaii, USA, 19.-22.09.2011.

Jegen, M., Worzewski, T., Kopp, H., Brasse, H. and Taylor, W., 2011: Magnetotelluric image of the fluid cycle in the Costa Rican subduction zone. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

John, T., **Gussone, N.,** Halama, R., Bebout, G., Podladchikov, Y. Y., Magna, T. and Klemd, R., 2011: Pulse-like long-distance fluid flow in subducting slabs. ILP Task force IX Workshop "Nature of the plate interface in subduction zones", Western Alps, Italy, 02.-07.07.2011.

John, T., Podladchikov, Y. Y., **Gussone, N.,** Bebout, G., Halama, R., Magna, T. and Klemd, R., 2011: On the duration and rates of fluid release from a dehydrating slab. Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Jørgensen, B. B., Flury, S., Lapham, L., Fossing, H., Røy, H., Jensen, J. B. and **Dale, A. W.,** 2011: Controls on methane accumulation and methane fluxes in gassy sediments, Baltic Sea. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Kanzow, T., 2011: Die atlantische Zirkulation: Wärmeförderband im Wandel?. Landesbeauftragtentreffen der Internationalen Physikolympiade, Kiel, 19.02.2011.

Kanzow, T., 2011: EU-THOR and European AMOC initiatives / plans. CLIVAR Atlantic Implementation Panel - 11. meeting, Miami, USA, 25.03.2011.

Kanzow, T. and Cunningham, S. A., 2011: Observed and simulated large-amplitude fluctuations of deep northward volume transports in the subtropical North Atlantic. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Kanzow, T. and Engel, A., 2011: Near-coastal supply of oxygen and dissolved organic matter to the oxygen minimum zone. SFB754 Retreat Climate-biogeochemistry interactions in the tropical ocean, Lübeck, 22.02.2011.

Kanzow, T. and **Fischer, J.,** 2011: Post, current and envisioned activities in the Labrador Sea of IFM-GEOMAR (Kiel). OSNAP West Meeting, Bedford Institute of Oceanography, Halifax, Canada, 26.04.2011.

Kanzow, T., Krahmann, G., Karstensen, J., Ohde, T., **Funk, A., Müller, M.** and **Fiedler, B.,** 2011: Glider fleet-based, multi-parameter observations in the tropical Northeast Atlantic. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Kanzow, T. and **Tippenhauer, S.,** 2011: Observation of small-scale variability from an autonomous vehicle in the central valley of the Mid-Atlantic Ridge. Physical Oceanography Seminar, University of Bremen, Bremen, 06.12.2011.

Karez, R., **Bock, G., Schütt, R., Lenz, M.** and **Wahl, M.,** 2011: Importance of remnant Fucus vesiculosus vegetation for associated fauna and macroalgae in Kiel Bight. 8. Baltic Sea Science Congress (BSSC), St. Petersburg, Russia, 22.-26.08.2011.

Karstensen, J., 2011: European Deep Sea Observatory Initiatives: EuroSITES, ESONET &

EMSO. Deep ocean observing strategy workshop, Paris, France, 30.03.-01.04.2011.

Karstensen, J., Czeschel, R., Hahn, J., Schlundt, M. and **Krahmann, G.,** 2011: In-situ calibration of Oxygen Optodes in the Southeast Pacific Oxygen Minimum Zone. EGO 2011 - 5th EGO Meeting and Glider School, Las Palmas, Gran Canary, 14.-18.03.2011.

Karstensen, J., Czeschel, R., Hahn, J., Stramma, L. and **Krahmann, G.,** 2011: In-situ calibration of oxygen optodes on gliders and floats: An example from the Southeast Pacific oxygen minimum zone. ARGO Oxygen Meeting, Brest, France, 25.-27.05.2011.

Karstensen, J., Visbeck, M., Müller, T. J., Send, U. and Valdimarsson, H., 2011: On the role of freshwater forcing on the convection intensity in the central Irminger Sea between 2002 and 2011. ICES/NAFO Symposium on the Variability of the North Atlantic and its Marine Ecosystems during 2000-2009, Santander, Spain, 10.-12.05.2011.

Kassens, H., 2011: Scientific cooperation with the Russian Federation – Otto Schmidt-Laboratory. 20 Year North Pole Anniversary Symposium, Kiel, 07.09.2011.

Kayzar, T. M., Nelson, B. K., **Portnyagin, M.,** Bachmann, O. and Ponomareva, V., 2011: Examining Canonical Theories of U-series Disequilibria in Volcanic Arcs in Light of a More Comprehensive, Global Database. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Klepp, C., **Bumke, K.,** Bakan, S. and Andersson, A., 2011: Precipitation Ground Validation over the Oceans. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Koeve, W. and **Dietze, H.,** 2011: Evaluating coupled ecosystem ocean circulation models: can we trust the concept of preformed nutrients? . EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Koeve, W., Kim, H. C., Lee, K. and **Oschlies, A.,**

2011: Computation of $f\text{CO}_2$ and the concentration of carbonate ions and the potential role of DOM accumulation in ocean acidification experiments. ASLO Aquatic Sciences Meeting, San Juan, Puerto Rico, USA, 13.-18.02.2011.

Koeve, W., Oschlies, A., Kriest, I., Duteil, O. and Dietze, H., 2011: Evaluating and optimising parameterisations of pelagic calcium carbonate production in global biogeochemical ocean models. BIOACID Annual Meeting 2011, Bremen, 26.-30.09.2011.

Kopp, H., 2011: Subduction system structure and forearc morphology: control on seismogenic rupture. GeoMunich 2011 Fragile Earth, Geological Processes from Global to Local Scales, München, 06.09.2011.

Koppers, A. P., Yamazaki, T. and **Geldmacher, J.,** 2011: Geodynamic Inferences from Integrated Ocean Drilling Program Expedition 330 to the Louisville Seamount Trail. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Krabbenhöft, A., Weinrebe, R. W., Kopp, H., Flueh, E. R., Ladage, S., Papenberg, C. and Planert, L., 2011: Morphological structures relate to the location and extent of the seismogenic zone – bathymetric studies of the Sunda margin subduction zone, Indonesia. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Krahmann, G., Kanzow, T., Karstensen, J. and Schlundt, M., 2011: Results from a Glider Swarm Experiment near Cape Verde. EGO 2011 - 5th EGO Meeting and Glider School, Las Palmas, Gran Canary, 14.-18.03.2011.

Krashennnikov, S. and **Portnyagin, M.,** 2011: Parental melts of Avachinsky volcano (Kamchatka) recorded in melt inclusions. Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Krashennnikov, S. P., **Portnyagin, M. V.,** Bazanova, L. I. and Ponomareva, V. V., 2011: Magmatic evolution of Avachinsky volcano (Kamchatka) du-

ring the Holocene revealed from composition of tephra, their matrix glasses and melt inclusions in minerals. 7. Biennial Workshop on Japan-Kamchatka-Alaska Subduction Processes: Mitigating Risk through International Volcano, Earthquake, and Tsunami Science (JKASP-2011), Petropavlovsk-Kamchatsky, Russia, 25.-30.08.2011.

Krasnova, E., **Portnyagin, M.,** Silantyev, S., **Werner, R. and Hoernle, K.,** 2011: First data on geochemistry of oceanic peridotites from NW Pacific and their possible contribution to volcanism in Kamchatka and Aleutian Arc. 7. Biennial Workshop on Japan-Kamchatka-Alaska Subduction Processes: Mitigating Risk through International Volcano, Earthquake, and Tsunami Science (JKASP-2011), Petropavlovsk-Kamchatsky, Russia, 25.-30.08.2011.

Krastel, S., Cagatay, N. and **Winkelmann, D.,** 2011: Bathymetric Survey of Lake Van (Bathys-Van), Turkey – finding answers to objectives not directly addressed by ICDP drilling at Lake Van. 1. PALEOVAN Post Drill Science Meeting, Zurich, Switzerland, 05.-06.09.2011.

Krastel, S., Golbeck, I., **Klaucke, I., Winkelmann, D., Meyer, M.,** Wynn, R. B. and Georgiopolou, A., 2011: The Sahara Slide complex (NW-African continental margin) – New geophysical and sedimentological data from the headwall area. 71. Jahrestagung der Deutschen Geophysikalischen Gesellschaft, Köln, 21.-24.02.2011.

Krastel, S., Meyer, M., Klaucke, I., Wynn, R. B., Georgiopolou, A., Golbeck, I. and **Winkelmann, D.,** 2011: New data from the Sahara Slide complex off NW-African: timing, failure processes, and hazard potential. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Krause, S., Liebetrau, V., Sánchez-Román, M., Gorb, S., McKenzie, J. A., and **Treude, T.,** 2011: Dolomite-type-ordered carbonate nucleation in biofilm of a marine sulfate-reducing bacterium: the role of extracellular polymeric sub-

stances. EGU General Assembly, Vienna, Austria, 07.04.2011.

Kriest, I., 2011: Respective influences of circulation and biogeochemical parameters on simulated nutrient and oxygen fields. Carbochange Kick-off Meeting, Bergen, Norway, 07.-10.03.2011.

Krüger, K., 2011: SHIVA-SONNE: Meteorological measurements. SHIVA-SONNE planning meeting, Kiel, 02.05.2011.

Krüger, K., 2011: Was hat der Ozean mit der Ozonschicht zu tun?. IFM-GEOMAR, Kiel, 21.01.2011.

Krüger, K., Fuhlbrügge, S., Quack, B., Heppach, H., Wittke, F. and Atlas, E., 2011: Diurnal and Regional Variability of halogen Emissions - Meteorological Overview and Atmospheric VLS. DRIVE meeting, Heidelberg, 21.03.2011.

Krüger, K., Immler, F., Fuhlbrügge, S. and Tegtmeyer, S., 2011: Meteorologische Bedingungen während der TransBrom-Sonne Transit im West Pazifik. Sonne Status Seminar, Hannover, 09.02.2011.

Krüger, K. and Quack, B., 2011: SHIVA-SONNE campaign, 15.- 29. November 2011 Singapore-Manila. SHIVA aircraft campaign planning meeting, München, 19.04.2011.

Krüger, K., Timmreck, C., Toohey, M. and Metzner, D., 2011: Modelling climate effects of large volcanic eruptions. SFB 574 Retreat, Sankelemark, 07.-08.09.2011.

Krüger, K., Toohey, M., Zachettin, D. and Timmreck, C., 2011: Climate effects of large explosive volcanism: tropical versus high latitude eruptions. KALMAR - Second Bilateral Workshop on Russian-German Cooperation on Kurile-Kamchatka and Aleutian Marginal Sea-Island Arc Systems, Trier, 16.-20.05.2011.

Krüger, K., Toohey, M., Zander, S. and Timmreck, C., 2011: Do tropical volcanic eruptions influence the Southern Annular Mode?. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Lampitt, R., Larkin, K., Hartman, S., Gkritzalis, A., Pagnani, M., Pebody, C., Ruhl, H., Billett, D., Hühnerbach, V., Masson, D., Osterhus, S., Nittis, K., Lykousis, V., Petihakis, G., Cardin, V., Bensi, M., Brunetti, F., Bozzano, R., Pensieri, S., **Wallace, D. W. R., Karstensen, J., Berndt, C.**, Priede, I., Holford, A., Niedzielski, T., Hastie, L., Jamieson, A., Coppola, L., Tamburini, C., Lefevre, D., Robert, A., Pouliquen, S., Carval, T., Ghiron, G., Llinas-Gonzalez, O., Cianca, A., Melicio, O., Santos, C., Medina, A., Silva, P., Monteiro, I., Gonzalez-Davila, M. and Santana-Casiano, M., 2011: The EuroSITES open ocean observatory network: Results and future vision. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Latif, M., Martin, T., Reintges, A., Martin, T., Park, W. and Keenlyside, N., 2011: Understanding simulated long-term changes in the North Atlantic MOC. RAPID - USA MOC International Science Meeting, Bristol, UK, 12.-15.07.2011.

Lebrato, M., Blanco-Ameijeiras, S., Stoll, H. M. and Iglesias-Rodriguez, M. D., 2011: Elemental carbonate chemistry selectivity in coccolithophores in present and future oceans. 5. European Phycological Congress : Molecular and cellular responses in algae induced by changes in the environment", Rhodes, Greece, 04.-09.09.2011.

Lebrato, M., Pitt, K. A., Sweetman, A. K., **Pahlow, M., Oschlies, A.**, Jones, D. O. B., Condon, R. H. and **Molinero, J. C.**, 2011: The fate of gelatinous zooplankton particulate organic matter (jelly-POM) in the biological pump: a modelling study. ASLO Aquatic Sciences Meeting, San Juan, Puerto Rico, USA, 13.-18.02.2011.

Lehmann, A., Myrberg, K. and Höfllich, K., 2011: A statistical approach on upwelling in the Baltic Sea based on the analysis of satellite data for 1990-2009. 8th Baltic Sea Science Congress, St. Petersburg, Russia, 24.08.2011.

Lehmann, A., Myrberg, K. and Höfllich, K., 2011: A statistical approach on upwelling in the

Baltic Sea based on the analysis of satellite data for 1990-2009. ICES Annual Science Conference, Gdansk, Poland, 20.09.2011.

Leiss, B., Walter, J. M., **Stipp, M.**, Klein, H., Hansen, B. T., Kuhs, W. F. and **Ullemeyer, K.**, 2011: Development of large sample environments for geological materials at the future POWTEX – neutron diffractometer, FRM-II, Garching, Germany. STI 2011 (Stress and Texture Investigations by Means of Neutron Diffraction), Dubna, Russia, 06.-09.06. 2011.

Lenz, M., 2011: Marine invasive species: Is stress tolerance a key trait for invasion success?. 1. Sino-German Workshop on Marine Sciences, Qingdao, VR China, 08.09.2011.

Lenz, M., Lehmann, A., Hinrichsen, H. H. and Wahl, M., 2011: Longterm monitoring of hard-bottom communities allows to identify natural variability as well as directional change in Baltic Sea shallow water ecosystems. International Workshop on the Monitoring of Hard-Bottom Communities in Baltic Sea coastal waters, IFM-GEOMAR, Kiel, 16.06.2011.

Liebetrau, V., Haeckel, M., Eisenhauer, A., Scholz, F., Hensen, C. and Reitz, A., 2011: Paired Sr isotope (⁸⁷Sr/⁸⁶Sr, ⁸⁸/⁸⁶Sr) systematic of pore water profiles: A new perspective in marine weathering and seepage studies. Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Liebetrau, V., Haeckel, M., Schmidt, M., Wallmann, K. and Romer, R. L., 2011: Geochemistry of cold seeps - Fluid sources and systematics. Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Lischka, S., 2011: Sensitivity of *Limacina helicina* (Pteropoda) to ocean acidification and warming – What we know and what I would like to know. IFM-GEOMAR FB2-Seminar, IFM-GEOMAR, Kiel, 18.04.2011.

Lischka, S., 2011: Synergistic effects of tempe-

rature and CO₂ on the dissolution response of the thecosome pteropods *Limacina helicina* and *L. retroversa* during the Arctic winter. IFM-GEOMAR FB2-JRG Biomineralization Seminar, IFM-GEOMAR, Kiel, 18.04.2011.

Lischka, S., Büdenbender, J., Boxhammer, T. and **Riebesell, U.**, 2011: Impact of ocean acidification and elevated temperatures on early juveniles of the polar shelled pteropod *Limacina helicina* (Thecosomata): mortality, shell growth, and shell degradation. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Lischka, S. and Riebesell, U., 2011: Synergistic effects of temperature and CO₂ on the dissolution response of *Limacina helicina* and *L. retroversa* (Thecosomata) in an Arctic fjord (Svalbard) during winter. BIOACID Annual Meeting 2011, Bremen, 26.-30.09.2011.

Lohbeck, K., Riebesell, U. and Reusch, T. B. H., 2011: Rapid evolution of a key phytoplankton species: 500 generations in a high CO₂ world. 13. Congress of the European Society for Evolutionary Biology - ESEB 2011, Tübingen, 20.-25.08.2011.

Lohbeck, K., Riebesell, U. and Reusch, T. B. H., 2011: Rapid evolution of a key phytoplankton species: 500 generations in a high CO₂ world. 3. Status Symposium of the Volkswagen Foundation in Evolutionary Biology: Evolution at the Sea, Sylt, 07.-11.11.2011.

Mahlke, J., Devey, C. W., Garbe-Schönberg, D. and **Hoernle, K.**, 2011: Geochemie und magmatische Entwicklung der Übergangszone zwischen kontinentaler und ozeanischer Kruste am aktiven Spreizungszentrum des Woodlark-Beckens (SO203). Statusseminar Meeresforschung mit FS Sonne 2011, Hannover, 09.-10.02.2011.

Marohn, L., Jakob, E., Klügel, A. and Hanel, R., 2011: The impact of continental migratory behaviour and habitat choice on the spawner quality of European eels. 21. Biennial Conference of the Coastal and Estuarine Research Federation, Day-

tona Beach, USA, 06.-10.11.2011.

Martin, T., Latif, M. and Reintges, A., 2011: The long-term freshwater budget and the relation to the MOC in the North Atlantic. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Matthiessen, B., de Boer, K. and Eriksson, B. K., 2011: Consequences of dominant species loss and dispersal for resilience after a realistically simulated heat wave. World Conference of Marine Biodiversity, Aberdeen, UK, 26.-30.09.2011.

McKinnon, A. D., **Böttger-Schnack, R.** and Dugan, S., 2011: Depth structuring of pelagic copepod biodiversity in waters adjacent to an Eastern Indian Ocean coral reef. 11. International Conference on Copepoda, Merida, Mexico, 11.07.2011.

McKinnon, A. D., Gusmao, F., Furnas, M. and **Böttger-Schnack, R.**, 2011: The contribution of metazooplankton to carbon flux in waters adjacent to an eastern Indian Ocean coral atoll. 5. International Zooplankton Production Symposium, Pucón, Chile, 14.-18.03.2011.

Melendez, A., Sallares, V., Prada, M., Ranero, C. R., McIntosh, K. D. and **Grevenmeyer, I.**, 2011: Overriding plate structure of the Nicaragua convergent margin: Constraints on the limits of the seismogenic zone and the 1992 tsunami earthquake. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Metzner, D., Zanchettin, D., **Toohey, M., Kutterolf, S.**, Timmreck, C. and **Krüger, K.**, 2011: Southern hemisphere climate response to the extremely large volcanic eruption of Los Chocoyos. Severe Atmospheric Aerosol Events Conference, Hamburg, 11.-12.08.2011.

Mildner, T.C., Eden, C., Nürnberg, D. and **Schönfeld, J.**, 2011: Loop Current variability – its relation to meridional overturning circulation and the impact of Mississippi river discharge. DFG Workshop Schwerpunktprogramm INTERDYNAMIK, Bremen, 28.02.-01.03.2011.

Mildner, T. C., Eden, C., **Nuernberg, D.** and

Schönfeld, J., 2011: Loop current variability due to wind stress and reduced sea level during the Last Glacial Maximum. AGU Fall Meeting 2011, San Francisco, USA, 05.12.-09.12.2011.

Mogollón, J. M., **Dale, A. W.** and Regnier, P., 2011: Modeling the Holocene methane cycle in Arkona Basin sediments. 10th International Conference on Gas in Marine Sediments, Listvaynka, Irkutsk (Lake Baikal), Russia, 09.09.2010.

Mogollón, J. M., **Dale, A. W.**, Regnier, P. and Schlüter, M., 2011: Methane oxidation rates in gassy areas across the North Sea, Baltic Sea transition. 8th Baltic Sea Science Congress, St. Petersburg, Russia, 22.-26.08.2011.

Mohr, V., Krüger, K. and **Tegtmeier, S.**, 2011: Analyzing the widening of the Tropical Tropopause Layer with a Lagrangian approach using ERA-Interim Data. Shiva annual meeting 2011, Leeds, UK, 14.07.2011.

Molinero, J. C., Hidalgo, M., Coll, M., Bastistic, M., Bonnet, D., Casini, M., Yahia, O. D., de Puelles, M. L., Kamburska, L., **Lebrato, M.**, Licandro, P., Lopez-Lopez, L., Lucic, D., Malej, A., Melin, F., Prieto, L., Siokou-Frangou, I., Zervoudaki, S. and Yahia, N. D., 2011: Jellyfish outbreaks in the Mediterranean Sea unveil synergies of climate and fisheries. 5. International Zooplankton Production Symposium, Pucón, Chile, 14.-18.03.2011.

Monecke, T., Hannington, M. D. and **Petersen, S.**, 2011: Water depth of massive sulfide formation: Evidence from modern seafloor hydrothermal systems. GAC-MAC Joint Annual Meeting, Ottawa, Canada, 27.05.2011.

Mueller, J., **Werner, K.**, Stein, R. H. and Moros, M., 2011: Holocene cooling and Neoglacial sea ice fluctuations in the subpolar North Atlantic. AGU Fall Meeting 2011, San Francisco, USA, 05.12.-09.12.2011.

Müller, J., Stein, R., **Werner, K.** and **Spielhagen, R.**, 2011: Neoglacial cooling culminates in rapid sea ice oscillations in eastern Fram Strait. EGU

General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Neumann J., Ramette A., **Haeckel M.**, de Beer D., Inagaki F., and Boetius A., 2011: Auswirkungen hoher CO₂-Konzentrationen auf benthische Lebensgemeinschaften der Tiefsee: SONNE Expedition SO196. Statusseminar 2011, Meeresforschung mit FS SONNE, Hannover, 09.-10.02.2011.

Noffke, A., Hensen, C., Sommer, S., Croot, P., Scholz, F. and **Wallmann, K.**, 2011: The benthic phosphorus and iron source across the Peruvian oxygen minimum zone. 2011 ASLO Aquatic Sciences Meeting, San Juan, Puerto Rico, 13.-18.02.2011.

Oesterwind, D. and **Piatkowski, U.**, 2011: Squid in the North Sea: a new effective top predator with potential impact on fish recruitment and ecosystem shift. ICES Annual Science Conference 2011, Gdansk, Poland, 19.-23.09.2011.

Ovsepyan, Y., Taldenkova, E., **Bauch, H. A.**, Rudenko, O. and Stepanova, A., 2011: High-resolution record of the Late Saalian–Eemian environmental changes in the northeastern White Sea Region (Bychye section) inferred from benthic foraminifers. 5. APEX Workshop, Longyearbyen, Svalbard, Norway, 01.-04.06.2011.

Pangnani, M., Lampitt, R., Larkin, K., Hartman, S., Campbell, J., Pebody, C., Ruhl, H., Billett, D., Hühnerbach, V., Masson, D., Osterhus, S., Skjelvan, I., Lykousis, V., Nittis, K., Lykousis, V., Perivoliotis, L., Kassis, D., Petihakis, G., Cardin, V., Bensi, M., Brunetti, F., Giorgetti, A., Bozzano, R., Pensieri, S., **Wallace, D. W. R., Karstensen, J., Berndt, C.**, Priede, I., Holford, A., Niedzielski, T., Hastie, L., Jamieson, A., Coppola, L., Tamburini, C., Lefevre, D., Robert, A., Pouliquen, S., Carval, T., Ghiron, G., Llinas-Gonzalez, O., Cianca, A., Melicio, O., Santos, C., Medina, A., Silva, P., Monteiro, I., Gonzalez-Davila, M. and Santana-Casiano, M., 2011: The EuroSITES open ocean observatory network: The Data Managers' perspective. EGU

General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Pansch, C., Nasrolahi, A., Appelhans, Y. and Wahl, M., 2011: Pre-Selection in Marginal Habitats -Various Life Stages of Amphibalanus improvisus show an Overall Strong Tolerance towards Ocean Acidification. 40. Benthic Ecology Meeting, Mobile, Alabama, USA, 19.03.2011.

Park, W., Ba, J., Mecking, J., Keenlyside, N. and Latif, M., 2011: Multicentennial, Quasicecentennial, and Multidecadal AMOC Variability. THOR CT1 Meeting, Hamburg, 09.-10.03.2011.

Park, W. and Latif, M., 2011: Atlantic Meridional Overturning Circulation Response to Idealized External Forcing. THOR Annual Meeting, Bergen, Norway, 09.-11.11.2011.

Patara, L: Climate-marine biogeochemistry two-way interactions in a coupled climate model. WCRP Open Sciences Conference, Lamont-Doherty Earth Observatory, Columbia University, New York, USA, 02.11.2011.

Patara, L., Böning, C.W., Biastoch, A. and Behrens, E., 2011: Towards the development of a modeling system for the study of the Antarctic Circumpolar Current (ACC) variability. DRAKKAR Meeting, Grenoble, France, 24.01.2011.

Paulsen, M., Clemmesen, C. and Malzahn, A., 2011: Essential fatty acid (Docosahexaenoic acid, DHA), affects RNA/DNA ratio of larval herring in the field. ICES Annual Science Conference 2011, Gdansk, Poland, 19.-23.09.2011.

Pesquer, D., Grevemeyer, I., Ranero, C. R. and Gallart, J., 2011: Slab rollback and continental break-up in a convergent setting – seismic structure of passive continental margins in the Western Mediterranean Sea. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Petersen, S., 2011: Hydrothermale Metallvorkommen vom Meeresboden: Exploration und Abbau. 4. Kieler Marktplatz: Marine Rohstoffe, Kiel, 10.03.2011.

Petersen, S., 2011: Seafloor Massive Sulphides (SMS) – Previous studies, geology and characteristics, global and Pacific region potential. SPC-EU Deep Sea Minerals Project Workshop, Nadi, Fiji, 08.06.2011.

Petersen, S., 2011: Seafloor massive sulfide deposits: challenges and opportunities. Brazilian-German Year of Science, Workshop on Opportunities in Geoscience and Geotechnology, Santos, Brazil, 14.02.2011.

Petersen, S., Hannington, M., Monecke, T. and Cherkachov, G., 2011: Are modern seafloor massive sulfide deposits a possible resource for mankind: lessons learned from shallow drilling operations. IEEE Ocean11 Conference, Hawaii, USA, 19.-22.09.2011.

Petersen, S., Purcell, M., Packard, G., Sherell, A., Wanless, D. and **Rothenbeck, M.,** 2011: High-resolution side-scan mapping of large areas of the Mid-Atlantic Ridge using a fleet of autonomous underwater vehicles (AUV's). Marine minerals: recent innovations in technology, Hawaii, USA, 14.-18.09.2011.

Petersen, S., Purcell, M., Packard, G., Sherrel, A., Wanless, D., Mulrooney, M. and **Rothenbeck, M.,** 2011: A new step to seafloor exploration: high-resolution side-scan mapping of the Mid-Atlantic Ridge using a fleet of three REMUS-type Autonomous Underwater Vehicles. 2011 SME/CMA Annual Meeting, Denver, USA, 27.02.-02.03.2011.

Piñero, E., 2011: Estudi de la influència de la degradació de materia orgànica in situ i del fluxe de fluids en la distribució global d'hidrats de gas. Seminar Series of the BCI. CMIMA-CSIC, Barcelona, Spain, 18.05.2011.

Piñero, E., 2011: Constraining the global distribution and amount of methane hydrates in marine sediments. Programa de Doctorado en Ciencias de la Tierra (UGR). Instituto Andaluz de Ciencias de la Tierra, Armilla, Granada (Spain), 04.10.2011.

Piñero, E., Rottke, W., Fuchs, T., **Hensen, C., Haeckel, M. and Wallmann, K.,** 2011: 3-D numerical modeling of methane hydrate deposits. In: Proceedings of the 7th International Conference on Gas Hydrates (ICGH2011). HWU, Edinburgh, 17.-21.07.2011.

Planert, L., Behrmann, J. H. and Jokat, W., 2011: Reports on Maria S. Merian expeditions offshore Namibia. DFG SPP SAMPLE Colloquium 2011, Potsdam, 07.-10.06. 2011.

Polyakova, Y., Klyuvitkina, T., **Bauch, H. and Kassens, H.,** 2011: High-resolution reconstruction of sea-ice and hydrological conditions in the south-eastern Laptev Sea during the Holocene deduced from microalgae assemblages. 5. APEX International Conference and Workshop: Quaternary Glacial and Climate Extremes, Longyearbyen, Svalbard, Norway, 01.-04.06. 2011.

Pomella, H., Klötzli, U., Scholger, R., **Stipp, M. and Fügenschuh, B.,** 2011: The tonalitic lamellae along the Giudicarie fault system: a multidisciplinary study. 9. Swiss Geoscience Meeting, Zürich, Switzerland, 11.-13.11.2011.

Portnyagin, M., Hoernle, K., Werner, R., Hauff, F. and Maicher, D., 2011: Initial scientific results from the cruise SO201-KALMAR: volcanology and petrology. Statusseminar Meeresforschung mit FS Sonne 2011, Hannover, 09.-10.02.2011.

Portnyagin, M., Hoernle, K., Werner, R., Hauff, F., Meicher, D., Yogodzinski, G., Baranov, B., Silantiev, S., Wanke, M. and Krasnova, E., 2011: Marine volcanological and petrological studies with R/V SONNE in the NW Pacific and Bering Sea: SO201 KALMAR cruise results. 7. Biennial Workshop on Japan-Kamchatka-Alaska Subduction Processes: Mitigating Risk through International Volcano, Earthquake, and Tsunami Science (JKASP-2011), Petropavlovsk-Kamchatsky, Russia, 25.-30.08.2011.

Portnyagin, M. V., Sobolev, A., Mironov, N., Gor-

bach, N., Kuzmin, D. and **Hoernle, K.**, 2011: The origin of primary magmas at the Kamchatka-Aleutian Arc junction by melting of mixed pyroxenite and peridotite mantle sources. KALMAR - Second Bilateral Workshop on Russian-German Cooperation on Kurile-Kamchatka and Aleutian Marginal Sea-Island Arc Systems, Trier, 16.-20.05.2011.

Prigge, E., 2011: Gefahren für den Aal - Sterblichkeitsfaktoren in Binnengewässern. Der Aal - Ein Meeresbürger stirbt aus, Multimar Wattforum, Tönning, 08.06.2011.

Prigge, E., 2011: Tracking migration routes of formerly stocked European eels (*Anguilla anguilla*) in the Baltic Sea. American Fisheries Society, 141st Annual Meeting, Seattle, USA, 04.-08.09.2011.

Prowe, A. E. F., Pahlow, M., Oschlies, A., Dutkiewicz, S. and Follows, M., 2011: Marine phytoplankton diversity: top-down control and the diversity-productivity relationship. 3. Advances in Marine Ecosystem Modelling Research Symposium (AMEMR III 'The Next Generation'), Plymouth, UK, 27.-30.06.2011.

Purcell, M., Gallo, D., Packard, G., Dennett, M., Sherell, A., **Rothenbeck, M.** and Pascaud, S., 2011: Use of REMUS 6000 AUVs in the search for Air France flight 447. IEEE Ocean11 Conference, Hawaii, USA, 19.-22.09.2011.

Quack, B., 2011: SO218 SHIVA- Sonne. Shiva annual meeting 2011, Leeds, UK, 14.07.2011.

Quack, B., 2011: SO218 SHIVA- Sonne. University of Malaya, Kuala Lumpur, Malaysia, 08.09.2011.

Quack, B. and Krüger, K., 2011: From the ocean to the stratosphere: The SHIVA SONNE cruise. Marine Science Institute, Quezon City, Manila, Philippines, 01.12.2011.

Quack, B. and Krüger, K., 2011: SOPRAN III - Halocarbons. SOPRAN meeting, Kiel, 07.11.2011.

Quack, B. and Krüger, K., 2011: Was hat der Ozean mit der Ozonschicht zu tun? IFM-GEOMAR,

Kiel, 05.10.2011.

Quack, B., Krüger, K., Atlas, E., Tegtmeier, S., Wittke, F., Hepach, H., Fuhlbruegge, S., Bange, H. and Wallace, D. W. R., 2011: Halocarbon emissions from tropical oceans and their transport into the stratosphere. SOPRAN Annual Meeting 2011, Heidelberg, 22.-23.03.2011.

Quack, B., Krüger, K., Atlas, E., Tegtmeier, S., Bracher, A., Wittke, F., Dinter, T. and Wallace, D. W. R., 2011: TransBrom Sonne, Emissionen kurzlebiger Bromverbindungen im tropischen Westpazifik, ihre Quellen und ihr Eintrag in die Stratosphäre. SONNE Statusseminar, Hannover, 09.-10.02.2011.

Quack, B., Krüger, K., Tegtmeier, S., Atlas, E., Grossmann, K., Rex, M., von Glasow, R., Sommariva, R. and Wallace, D. W. R., 2011: Halocarbon sources and emissions over the Western Pacific. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Quack, B., Wittke, F., Bracher, A., Krüger, K., Sinnhuber, B. M. and Wallace, D. W. R., 2011: Emission inventories and future oceans. Shiva annual meeting 2011, Leeds, UK, 14.07.2011.

Raddatz, J., Liebetrau, V., Eisenhauer, A., Rüggeberg, A., Hathorne, E. and Nürnberg, D., 2011: Temperature reconstructions on carbonate mounds (IODP Site 1317) using elemental ratios (Mg/Ca, Mg/Li, Sr/Ca) as well as non-traditional isotope techniques. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Raddatz, J., Liebetrau, V., Eisenhauer, A., Rüggeberg, A., Hathorne, E., Nürnberg, D. and Dullo, W. C., 2011: Temperature reconstructions on carbonate mounds (IODP Site 1317) using elemental ratios (Mg/Ca, Mg/Li, Sr/Ca) as well as non-traditional isotope techniques. EGU General Assembly 2011, Vienna, Austria, 05.04.2011.

Ranero, C. R., Sallares, V., **Grevemeyer, I.**, Zietlini, N., Vendrell, M. G., Prada, M. and **Moeller,**

S., 2011: Rifting of the Tyrrhenian Basin: A Natural Laboratory to Study Extension of Continental Lithosphere and Conjugate Rifted Margin Formation. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Reitz, A., 2011: Sub-seabed CO₂ storage: impact on marine ecosystems. CO₂NET 2011 CCS Capacity-Building Network and EU FP7 CCS Conference, London, 24.-26.05.2011.

Riethdorf, J. R., Max, L., Nürnberg, D. and Tiedemann, R., 2011: Rekonstruktion der Oberflächentemperaturen, marinen Produktivität und Terrigenflüsse im westlichen Beringmeer während des Spätpleistozäns und Holozäns (Sonne 201-2). Statusseminar Meeresforschung mit FS Sonne 2011, Hannover, 09.-10.02.2011.

Riethdorf, J. R., Max, L., Nürnberg, D. and Tiedemann, R., 2011: Late Pleistocene to Holocene changes in sea surface temperature, marine productivity and terrigenous fluxes in the western Bering Sea. KALMAR - Second Bilateral Workshop on Russian-German Cooperation on Kurile-Kamchatka and Aleutian Marginal Sea-Island Arc Systems, Trier, 16.-20.05.2011.

Riethdorf, J. R., Max, L., Nürnberg, D., Tiedemann, R., Gorbarenko, S. and Malakhov, M., 2011: Millennial-scale climate variability in the subarctic NW-Pacific during the last 150 kyr and implications for upper-ocean stratification. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Romanova, I., Murphy, D. T., **Geldmacher, J.** and **Heydolph, K.**, 2011: Sr, Nd, Hf and Pb isotope systematics of basaltic samples from IODP Site U1349A, Ori Massif of the Shatsky Rise Oceanic Plateau, Northwest Pacific. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Rovelli, L., **Dengler, M., Schmidt, M., Sommer, S., Linke, P. and McGinnis, D.**, 2011: Turbulent mixing in the central North sea: sources and implications for vertical transport of dissolved gases during summertime. 5. Warnemünde Turbulence

Days on Turbulence and Mixing in Estuaries and Coastal Seas, Vilm, 05.-08.09.2011.

Ruiz Pino, D., **Paulmier, A., Duteil, O.** and Rafidzehl, M., 2011: Main hypotheses from tropical OMZs and coastal hypoxia towards high latitude deoxygenation. EUR-OCEANS Conference - Ocean deoxygenation and implications for marine biogeochemical cycles and ecosystems, Toulouse, France, 24.-26.10.2011.

Ryabenko, E., 2011: Present and future in SFB-754. NICOPP Meeting: Sedimentary $\delta^{15}\text{N}$ - data synthesis, analysis and modelling, Halifax, Canada, 08.-10.07.2011.

Scholz, F., Hensen, C., Noffke, A., Rhode, A. and **Wallmann, K.**, 2011: Early diagenesis of trace metals (V, Mo, U) in sediments of the Peruvian upwelling area: response to oxygen dynamics in the water column. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Schulz, K., Bellerby, R., **Engel, A.**, Gattuso, J. P., Hessen, D., **Klavns, S., Krug, S.**, Nondal, G., Silyakova, A., Sswat, M. and **Riebesell, U.**, 2011: Organic matter dynamics and CO_2 responses of the 2010 Svalbard mesocosm experiment. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Schwarzkopf, F.U., 2011: Tracers in AGR-IF - Investigating the ventilation of the Oxygen Minimum Zones. DRAKKAR Meeting, Grenoble, France, 25.01.2011.

Schwarzkopf, F.U., 2011: TRATL01 - A 1/10th of a degree nested modeling approach for simulating the tropical oceans. PIRATA-16/TACE/TAV Joint Meeting, Fernando de Noronha, Brazil, 16.03.2011.

Schwarzkopf, F.U. and **Böning, C.W.**, 2011: Decadal subsurface cooling and sea level fall in the tropical south Indian Ocean caused by Pacific wind forcing. EGU General Assembly, Vienna, Austria, 05.04.2011.

Schwarzkopf, F. and **Böning, C. W.**, 2011:

Contribution of Pacific wind stress to decadal subsurface cooling and falling sea level in the tropical south Indian Ocean. IUGG General Assembly, Melbourne, Australia, 01.07.2011.

Schwarzkopf, F. and **Böning, C. W.**, 2011: Multi-decadal subsurface cooling and falling sea level in the Indian Ocean. Drakkar/My Ocean Annual Workshop, Grenoble, France, 24.01.2011.

Schönfeld, J., 2011: History and development of methods in Recent foraminiferal studies. FOBIMO Workshop Foraminiferal Biomonitoring, Fribourg, Switzerland, 22.06.2011.

Schönfeld, J., 2011: The use of foraminifera for bio-monitoring of marine environments - results and recommendations from the FOBIMO Workshop. Annual TMS Foraminifera Group Meeting „MIKRO-2011“, Krakau, Poland, 30.06.2011.

Somes, C., 2011: Balancing the fixed nitrogen budget in the global ocean. 43th International Liège Colloquium on Ocean Dynamics Tracers of physical and biogeochemical processes, past changes and ongoing anthropogenic impacts, Liège, Belgium, 02.-06.05.2011.

Somes, C., 2011: Using nitrogen isotopes and xSP to constrain the fixed-N budget in the past and present ocean. NICOPP Meeting: Sedimentary $\delta^{15}\text{N}$ - data synthesis, analysis and modeling, Halifax, Canada, 08.-10.07.2011.

Somes, C., 2011: Using nitrogen isotopes and xSP to constrain the fixed-N budget in the past and present ocean. Institute of Technology Zurich Seminar, Zürich, Switzerland, 18.07.2011.

Sommer, S., Schorp, T., McGinnis, D. F., Dale, A. W. and **Pfannkuche, O.**, 2011: In situ fluxes of major nitrogen species, phosphorus, oxygen and silicate across the benthic boundary layer of the oxic to anoxic Gotland Basin (Baltic Sea). 2011 ASLO Aquatic Sciences Meeting, San Juan, Puerto Rico, 13.-18.02.2011.

Speckbacher, R., Behrmann, J. H., Nagel, T., Stipp, M. and **Devey, C. W.**, 2011: Strukturgeo-

logische Untersuchung des Moresby Seamount Detachment, Woodlark-Becken (E Papua-Neuguinea): Ergebnisse der SO-203 Expedition. Statuseminar Meeresforschung mit FS Sonne 2011, Hannover, 09.-10.02.2011.

Spielhagen, R. F., 2011: History of Atlantic water advection to the Arctic in the last 15 million years. 20 Year North Pole Anniversary Symposium, Kiel, 07.09.2011.

Spielhagen, R. F. and **Bauch, H. A.**, 2011: Contrasting interglacials in the Arctic Ocean - an Eemian-Late Holocene comparison based on stable oxygen and carbon isotopes . 5. APEX Workshop, Longyearbyen, Svalbard, Norway, 01.-04.06.2011.

Spielhagen, R. F., Werner, K., Aagaard-Sørensen, S., Zamelczyk, K., Kandiano, E., Budeus, G., Husum, K., Marchitto, T. M. and Hald, M., 2011: History of ocean heat advection to the Arctic from the Medieval Climate Anomaly to present. 18. INQUA-Congress, Quaternary Sciences - The View From The Mountains, Bern, Switzerland, 21.-27.07.2011.

Spielhagen, R. F., Werner, K., Aagaard-Sørensen, S., Zamelczyk, K., Kandiano, E., Budeus, G., Husum, K., Marchitto, T. M. and Hald, M., 2011: Oceanic heat advection to the Arctic in the last Millennium. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Steeb, P., Kretschmer, K., Linke, P., and Treude, T., 2011: What is the upper limit of the benthic microbial methane filter? EGU General Assembly 2011, Vienna, Austria, 07.04.2011.

Stichel, T., Frank, M., Rickli, J., Hathorne, E., Haley, B. A., Jeandel, C. and Pradoux, C., 2011: Sources and input mechanisms of hafnium and neodymium in surface waters of the Atlantic sector of the Southern Ocean. Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Stipp, M., 2011: Dynamic recrystallization of quartz - a natural analog for crystal plastic defor-

mation of ice. MicroDICE 2011, Grenoble, France, 07.-09.11.2011.

Stipp, M., Walter, J. M., Leiss, B., Klein, H., Hansen, B. T., Kuhs, W. F. and **Ullemeyer, K.**, 2011: Deformation of ice and geological materials in the neutron beam at the future POWTEX – diffractometer, FRM-II, Germany. MicroDICE 2011, Grenoble, France, 07.-09.11.2011.

Stockhecke, M., Anselmetti, F. S., **Cukur, D.**, **Krastel, S.**, Sturm, M. and **Winkelmann, D.**, 2011: Earthquake-related microdeformations of the Lake Van sediments. 5. International Limnogeology Congress, ILIC 2011, Konstanz, 31.08.-03.09.2011.

Stockhecke, M., Anselmetti, F. S., Kwiecien, O., Sturm, M. and **Winkelmann, D.**, 2011: Sedimentological and stratigraphic framework of the several hundred thousand years old lacustrine record from Lake Van, Turkey. 18. INQUA 2011, Quaternary Sciences - The View From the Mountains, Bern, Switzerland, 21.-27.10.2011.

Stockhecke, M., Anselmetti, F. S., Sturm, M. and **Winkelmann, D.**, 2011: Lithostratigraphy of Lake Van sediments over the past 400.000 years. 5. International Limnogeology Congress, ILIC 2011, Konstanz, 31.08. - 03.09.2011.

Stratford, W. R., Peirce, C., Watts, A. B., **Grevenmeyer, I.**, Paulatto, M., Bassett, D., Hunter, J. and Kalnins, L. M., 2011: Lateral variations in the structure of the overriding and down-going plates in response to subduction of the Louisville Ridge seamount chain at the Tonga-Kermadec Trench. American Geophysical Union Fall Meeting, San Francisco, USA, 10.-14.12.2011.

Stumpf, R., **Frank, M.**, **Schönfeld, J.** and **Haley, B. A.**, 2011: Climatically driven changes in sediment supply on the SW Iberian shelf since the Last Glacial Maximum. Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Suarez-Bosche, N., **Lebrato, M.** and Iglesias-Rodriguez, M. D., 2011: Natural adaptation to en-

vironmental selection pressure: a case study of sea urchin larvae. ASLO Aquatic Sciences Meeting, San Juan, Puerto Rico, USA, 13.-18.02.2011.

Swidinsky, A. and Edwards, R. N., 2011: Navigation and resistivity inversion using stationary seafloor instruments. MARELEC Conference, San Diego, USA, 20.-23.06.2011.

Swidinsky, A., **Hölz, S.** and **Jegen, M.**, 2011: Mapping the resistivity structure of the North Alex mud volcano with the marine CSEM method. Schmucker-Weidelt-Kolloquium - 24. Kolloquium Elektromagnetische Tiefenforschung, Neustadt an der Weinstraße, 26.-29.09.2011.

Tanhua, T., Khatiwala, S. and Sabine, C. L., 2011: Carbon Changes in the Interior Ocean. The Ocean Carbon Cycle at a time of change: Synthesis and Vulnerabilities - Joint SOLAS/IMBER/IOCCP Carbon (SIC) Synthesis Meeting, Paris, France, 14.-16.09.2011.

Tanhua, T., **Körtzinger, A.** and **Wallace, D. W. R.**, 2011: Observations of the Ocean's role in the carbon cycle. GEO-Carbon Conference: Carbon in a changing World, Rome, Italy, 24.-26.10.2011.

Tegtmeier, S. and Hegglin, M. I., 2011: SPARC Data Initiative overview and evaluations. 2. SPARC data initiative workshop, Bern, Switzerland, 06.06.2011.

Tegtmeier, S. and Hegglin, M. I., 2011: SPARC Data Initiative report and reviews. 3. Sparc Data initiative workshop, Toronto, Canada, 14.12.2011.

Tegtmeier, S. and Hegglin, M. I., 2011: WCRP/SPARC Perspectives and SPARC Data Initiative on chemical observations. GCOS/AOPC meeting, WMO, Genf, Switzerland, 07.-11.02.2011.

Teschner, C., **Frank, M.** and **Haley, B. A.**, 2011: Reconstructing water mass exchange and climate variability in the northernmost Atlantic and Arctic oceans during the beginning of the Quaternary. ICDP/IODP Kolloquium 2011, Münster, 14.-16.03.2011.

Teschner, C., **Frank, M.**, **Haley, B. A.**, **Christl, M.**,

Vogt, C. and **Knies, J.**, 2011: Plio-Pleistocene evolution of water mass exchange and erosional input in the Fram Strait. Goldschmidt Conference 2011, Prague, Czech Republic, 14.08.-19.08.2011.

Teschner, C., **Frank, M.**, **Haley, B. A.**, **Knies, J.** and **Christl, M.**, 2011: Plio-Pleistocene changes in water mass exchange and erosional inputs in the Fram Strait. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Tillner, R., **Rønnestad, I.**, **Harboe, T.** and **Ueberschär, B.**, 2011: Hormonal control of tryptic activity in marine fish larvae: ontogeny and diurnal rhythm. Aquaculture Europe Conference 2011, Rhodes, Greece, 18.-21.10.2011.

Tomasini, J., Preu, B., **Krastel, S.**, Schwenk, T., Spiess, V. and de Santa Ana, H., 2011: Distinct expressions of the BSR using various frequencies offshore Uruguay and its correspondence with the gas hydrate stability zone. 7th International Conference on Gas Hydrates (ICGH 2011), Edinburgh, Scotland, United Kingdom, 17.-21.07.2011.

Toohey, M., **Krüger, K.**, **Metzner, D.**, Zanchettin, D., Niemeier, U. and Timmreck, C., 2011: MAECHAM5-HAM activities at IFM-GEOMAR: simulating Central and South American volcanic eruptions. HAMMOZ Workshop, Zürich, Switzerland, 21.-23.03.2011.

Toohey, M., **Krüger, K.**, Niemeier, U. and Timmreck, C., 2011: How does the impact of tropical volcanic eruptions depend on eruption season?. Conference on „Severe Atmospheric Aerosol Events”: Pathways, impacts and policies on large aerosol injections into the atmosphere, Hamburg, 11.-12.08.2011.

Toohey, M., Niemeier, U., Timmreck, C. and **Krüger, K.**, 2011: Nonlinear atmospheric circulation responses to tropical volcanic eruptions: implications for ice core-derived volcanic forcing reconstructions. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Treude, T., **Sommer, S.**, **Pfannkuche, O.**, **Grei-**

nert, J., Bussmann, I., **Bertics, V.** and Veloso, M., 2011: Preliminary results from the RV Poseidon 419 expedition to the methane seepage area off West Spitzbergen, Arctic Ocean. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Tsandev, I., Regnier, P., **Dale, A. W.** and Ridgwell, A., 2011: Methane processing in arctic shelves and the role of anaerobic methane oxidation. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Tsandev, I., Regnier, P., Ridgwell, A. and **Dale, A. W.**, 2011: Sea floor methane emissions in continental shelves and the role of anaerobic methane oxidation. Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Ueberschär, B., 2011: Critical periods in early stages of fish and the role of mesocosm in larval fish research. MESOAQUA PhD Course/Workshop, IFM-GEOMAR, Kiel, 29.08.-02.09.2011.

Van Nieuwenhove, N., Bauch, H. A., De Vernal, A., Eynaud, F., Kandiano, E. and Fréchet, B., 2011: Last interglacial (MIS 5e) surface circulation in the North Atlantic and Nordic seas, based on dinoflagellate cysts. XVIII. INQUA-Congress, Quaternary Sciences – The View From The Mountains, Bern, Switzerland, 25.07.2011.

Van Nieuwenhove, N., Bauch, H. A., Kandiano, E., Matthiessen, J., De Vernal, A. and Fréchet, B., 2011: Timing of MIS 5e marine optimum and implications for the stratigraphic context of last interglacial sediments in the (sub)arctic North Atlantic. 41st Annual Arctic Workshop, Montréal, Québec, Canada, 04.03.2011.

Van Nieuwenhove, N., Bonnet, S., Eynaud, F., De Vernal, A. and Bauch, H. A., 2011: Holocene versus last interglacial (MIS 5e) surface ocean conditions in the Nordic seas and northern North Atlantic. 9th International Conference on Modern and Fossil Dinoflagellates, DINO9, Liverpool, Great Britain, 30.08.2011.

Van Nieuwenhove, N., De Vernal, A., Fréchet-

te, B., **Bauch, H. A.,** Eynaud, F. and **Kandiano, E.**, 2011: A dinoflagellate cyst perspective on the surface circulation in the North Atlantic and Nordic seas during the Last Interglacial (MIS 5e). GEOTOP Annual Meeting, Orford, Quebec, Canada, 06.02.2011.

Vazquez Riveiros, N., Waelbroeck, C., Skinner, L., Duplessy, J. C., **Kandiano, E.** and **Bauch, H. A.**, 2011: Massive iceberg discharges during Termination V: causes and consequences. INQUA 2011, Bern, Switzerland, 21.-27.07.2011.

Visbeck, M., 2011: Climate service. ISOS-Lecture, Kiel, 03.02.2011.

Visbeck, M., 2011: The Future Ocean Initiative. Symposium „Microbial Interactions in Marine Systems“, Greifswald, 07.07.2011.

Visbeck, M., 2011: Impact of the Southern Annual Mode on the Southern Ocean stratification and circulation. University of Reading, Department of Meteorology, Reading, UK, 14.03.2011.

Visbeck, M., 2011: Scientific challenges in ocean circulation and climate dynamics: Observing changes along the Deep Western Boundary Current. International Symposium on marine ESFRI infrastructures 2011, Brest, France, 29.06.2011.

Visbeck, M., 2011: Wie steht es um die Zukunft der Meere?. ERES-Stiftung, München, 26.02.2011.

Vollstaedt, H., Eisenhauer, A., Böhm, F., Fietzke, J., Krabbenhöft, A., Liebetrau, V., Farkaš, J. and Véizer, J., 2011: The Paleozoic $\delta^{88/86}\text{Sr}$ seawater record – Quantifying carbonate production rates at mass extinction events. Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Vollstaedt, H., Eisenhauer, A., Krabbenhöft, A., Liebetrau, V., Böhm, F., Farkaš, J., Tomašových, A. and Véizer, J., 2011: The Paleozoic $\delta^{88/86}\text{Sr}$ record of marine carbonates – Implications to ocean carbonate chemistry and mass extinction events. EGU General Assembly 2011,

Vienna, Austria, 03.-08.04.2011.

Wagener, T., Wuttig, K., Dammshäuser, A., Bressac, M., **Streu, P.,** Guieu, C. and Croot, P., 2011: Temporal Changes in trace metal concentrations during an artificial dust deposition to Large Mesocosms (DUNE-2 Experiment). SOLAS - IGAC France join open meeting Chemistry, Transport and Biogeochemistry feedback: Frontiers in Chemistry, Physics and Biology, Paris, France, 29.-30.06.2011.

Wagener, T., **Wuttig, K., Dammshäuser, A.,** Bressac, M., **Streu, P.,** Guieu, C. and Croot, P., 2011: Temporal changes in trace metals concentrations during DUNE-2 Experiment. DUNE Workshop, Villefranche-sur-Mer, France, 06.-07.04.2011.

Wahl, M., Lenz, M., Hinrichsen, H. H. and Lehmann, A., 2011: The noise behind the signal: A quantification of natural fluctuations in community composition needs to precede the detection of trends. 8. Baltic Sea Science Congress (BSSC), St. Petersburg, Russia, 24.08.2011.

Wallmann, K., 2011: Marine Gashydrates: Production of Natural Gas and Storage of CO_2 . Petrobras, Kiel, 28.03.2011.

Wallmann, K., 2011: Marine Gashydrates: Production of Natural Gas and Storage of CO_2 . Statoil, Kiel, 28.04.2011.

Wallmann, K., 2011: Storage of CO_2 in Marine Sediments. KDM, Bremen, 02.05.2011.

Wallmann, K., 2011: Storage of CO_2 in Marine Sediments. ECO2 Kick-off Meeting, Kiel, 17.05.2011.

Wallmann, K., 2011: Marine Gashydrates: Production of Natural Gas and Storage of CO_2 . Chinese Delegation, Kiel, 30.06.2011.

Wallmann, K., 2011: Marine Gashydrates: Production of Natural Gas and Storage of CO_2 . Delegation aus Taiwan, Kiel, 11.07.2011.

Wallmann, K., Burwicz, E., Ruepke, L. H., Marquardt, M., Pinero, E., Haeckel, M. and

Hensen, C., 2011: Constraining the global inventory of methane hydrate in marine sediments. 7th International Conference on Gas Hydrates (ICGH2011). HWU, Edinburgh, UK, 17-21.07.2011.

Wanke, M., Portnyagin, M., Werner, R., Hauff, F. and Hoernle, K., 2011: Erste Ergebnisse der Untersuchungen des Basements der Bowers und Shirshovrücken im Rahmen von SO201 KALMAR (Bering Sea, NW Pazifik). Statusseminar Meeresforschung mit FS Sonne 2011, Hannover, 09.-10.02.2011.

Wanke, M., Portnyagin, M., Werner, R., Hauff, F., Hoernle, K. and Garbe-Schönberg, D., 2011: Geochemical evidence for subduction related origin of the Bowers and Shirshov Ridges (Bering Sea, NW Pacific). 7. Biennial Workshop on Japan-Kamchatka-Alaska Subduction Processes: Mitigating Risk through International Volcano, Earthquake, and Tsunami Science (JKASP-2011), Petropavlovsk-Kamchatsky, Russia, 25.-30.08.2011.

Wanke, M., Portnyagin, M. V., Werner, R., Hauff, F., Hoernle, K. and Garbe-Schönberg, D., 2011: New geochemical data provide evidence for an island-arc origin of the Bowers and Shirshov Ridges (Bering Sea, NW Pacific). KALMAR - Second Bilateral Workshop on Russian-German Cooperation on Kurile-Kamchatka and Aleutian Marginal Sea-Island Arc Systems, Trier, 16.-20.05.2011.

Watts, A. B., Peirce, C., Grevemeyer, I., Pautletto, M., Stratford, W. R., Bassett, D., Hunter, J., Kalnins, L. M., de Ronde, C. E. and Lamarche, G., 2011: New Sonar evidence of the rates of growth and collapse of Monowai Volcano, Kermadec Arc. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Weinrebe, W., Flüh, E. R., Hasert, M., Behrmann, J., Völker, D., Geersen, J., Ranero, C. R. and Diaz-Naveas, J., 2011: 16 years, 16 cruises, 1.6 billion soundings: a Compilation of High-Resolution Multibeam Bathymetry of the Active Plate

Boundary Along the Chilean Continental Margin. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Weinrebe, W., Völker, D., Geersen, J., Behrmann, J., Chadwell, D. and Lonsdale, P., 2011: Bathymetrische Kartierungen am aktiven chilenischen Kontinentalrand vor und nach dem Magnitude -8.8 - Erdbeben vom 27.02.2010. Statusseminar Meeresforschung mit FS Sonne 2011, Hannover, 09.-10.02.2011.

Werner, K. and Spielhagen, R. F., 2011: Holocene variability of surface and subsurface Atlantic Water inflow on the West Spitsbergen continental margin. 5th APEX Workshop, Longyearbyen, Svalbard, Norway, 01.-04.06.2011.

Werner, K. and Spielhagen, R. F., 2011: Variability of Holocene Atlantic water - a multiproxy perspective from the West Spitsbergen continental margin. XVIII. INQUA-Congress, Quaternary Sciences - The View From The Mountains, Bern, Switzerland, 21.07.-27.07.2011.

Werner, K., Teschner, C., Spielhagen, R. F., Hass, H. C., Aagaard-Soerensen, S., Struve, T. and Frank, M., 2011: Holocene surface and deep water variability in the eastern Fram Strait - expanding the multiproxy perspective by radiogenic isotope tracers. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Werner, R., Maicher, D., Hauff, F., Hoernle, K. and Herbrich, A., 2011: Hintergrund und erste (unerwartete) Ergebnisse von SO208 Leg 1 (PLUMEFLUX): Ausbreitung von Galápagosplumematerial im äquatorialen Ostpazifik. Statusseminar Meeresforschung mit FS Sonne 2011, Hannover, 09.-10.02.2011.

Wheeler, W., Heincke, B., Rossi, G. and Allroggen, N., 2011: GPR, seismic and geo-electric investigation of a paleokarst breccia pipe field, Svalbard. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Wittke, F., Quack, B. and Krüger, K., 2011:

Global halocarbon fluxes based on in-situ measurements. Shiva annual meeting 2011, Leeds, UK, 14.07.2011.

Wuttig, K., Heller, M., Guieu, C. and Croot, P., 2011: Uncovering the key processes involved in manganese biogeochemical cycling in the Ocean. Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Wuttig, K., Heller, M., Guieu, C. and Croot, P., 2011: Uncovering the key processes involved in manganese biogeochemical cycling in the Ocean. 2. Young Scientist Excellence Cluster Conference on Marine and Climate Research, Bremen, 04.10.2011.

Wuttig, K., Wagener, T., Dammshäuser, A., Bressac, M., Heller, M., Streu, P., Guieu, C. and Croot, P., 2011: Temporal changes in the biogeochemistry of Mn, Fe and Al after an artificial dust deposition to large mesocosms (DUNE project). ASLO Aquatic Sciences Meeting 2011, San Juan, Puerto Rico, USA, 13.-18.02.2011.

Würtz, S., Schröder, J. and Schulz, C., 2011: Stress in der Fischzucht - ein Beitrag zum Animal Welfare. 61. Öffentliche Hochschultagung der A+E-Fakultät der CAU, Kiel, 03.02.2011.

Yogodzinski, G., Turka, J., Arndt, S., Kelemen, P., Portnyagin, M. V. and Hoernle, K., 2011: Geochemistry of Seafloor Lavas of the Western Aleutian Arc. KALMAR - Second Bilateral Workshop on Russian-German Cooperation on Kurile-Kamchatka and Aleutian Marginal Sea-Island Arc Systems, Trier, 16.-20.05.2011.

Zamora, L., Hansell, D. A., Prospero, J. M. and Trapp, J. M., 2011: Atmospheric phosphorus deposition to the subtropical North Atlantic: sources, properties, and relationship to nitrogen deposition. ASLO Aquatic Sciences Meeting, San Juan, Puerto Rico, USA, 13.-18.02.2011.

van den Bogaard, C., Dullo, C. and Baranov, B., 2011: KALMAR - „Kurile-Kamchatka and Aleutian Marginal Sea-Island Arc Systems: Geodynamic

and Climate Interaction in Space and Time" – A Russian - German Research Initiative. 7. Biennial Workshop on Japan-Kamchatka-Alaska Subduction Processes: Mitigating Risk through International Volcano, Earthquake, and Tsunami Science (JKASP-2011), Petropavlovsk-Kamchatsky, Russia, 25.-30.08.2011.

von Bröckel, K., Czerny, J. and Büdenbender, J., 2011: KOSMOS – Kiel Off-Shore Mesocosms for Oceanographic Studies Technical Details. ME-SOAQUA PhD Course/Workshop „Mesocosms in aquatic ecology: use, problems and potentials“, IFM-GEOMAR, Kiel, 29.08.-02.09.2011.

6.3 Poster

Aagaard-Sørensen, S., Husum, K., Hald, M., Marchitto, T., **Werner, K. and Spielhagen, R.,** 2011: Mg/Ca paleotemperature reconstructions of Atlantic Water advected to the European subarctic and arctic margins the past 14.000 cal yr B.P. 5. APEX Workshop, Longyearbyen, Svalbard, Norway, 01.-04.06. 2011.

Altabet, M., **Ryabenko, E., Stramma, L., Wallace, D. W. R., Frank, M., Grasse, P.** and Lavik, G., 2011: Eddy hotspots for fixed nitrogen-loss from the Peru oxygen minimum zone. Ocean Deoxygenation Meeting - Ocean deoxygenation and implications for marine biogeochemical cycles and ecosystems conference, Toulouse, France, 24.-26.10.2011.

Arroyo, I. G., Grevemeyer, I., von Huene, R., Husen, S., **Ranero, C. R. and Behrmann, J.,** 2011: Interplate seismicity at the CRISP site: the 2002 Osa earthquake sequence. AGU Fall Meeting 2011, San Francisco, California, USA, 05.-09.12.2011.

Ba, J., Keenlyside, N., Park, W. and Hawkins, E., 2011: North Atlantic Multi-decadal variability simulated in CGCMs. RAPID - USA MOC International Science Meeting, Bristol, UK, 12.-15.07.2011.

Bach, L., 2011: The influence of pH and dissolved inorganic carbon ion coccolith size and morphology of *Emiliania huxleyi*. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Bach, L., 2011: The influence of pH and dissolved inorganic carbon ion coccolith size and morphology of *Emiliania huxleyi*. 2nd BIOACID Annual Meeting, Bremen, 26.-28.09.2011.

Banyte, D., Tanhua, T., Visbeck, M., Wallace, D. W. R., Karstens, J., Krahmann, G., Schneider, A. and Stramma, L., 2011: Diapycnal diffusivity at the upper boundary of the North Tropical Atlantic Oxygen Minimum Zone. WCRP OSC Climate Research in Service to Society, Denver, USA, 24.-28.10.2011.

Baranov, B. and **Werner, R.,** 2011: Structure and regional stress of the Vulkanologov Massif (Western Bering Sea) based on swath bathymetric surveys. KALMAR - Second Bilateral Workshop on Russian-German Cooperation on Kurile-Kamchatka and Aleutian Marginal Sea-Island Arc Systems, Trier, 16.-20.05.2011.

Bassett, D., Watts, A. B., Peirce, C., **Grevemeyer, I.,** Paulatto, M., Stratford, W. R., Hunter, J. and Kalnins, L. M., 2011: Crustal structure and seismicity associated with seamount subduction: Preliminary results from the Tonga-Kermadec Trench - Louisville Ridge collision zone. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Bauch, D., Rutgers van der Loeff, M., Andersen, N., Torres-Valdes, S., Bakker, K. and Abrahamson, E. P., 2011: Freshwater and polynya components of the shelf-derived Arctic Ocean halocline in summer 2007 identified by stable oxygen isotopes. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Baustian, T., Graco, M., **Bange, H. W.,** Ledesma, J., Sarmiento, M., Flores, G., León, V., Morón, O., and Robles, C., 2011: N₂O Time Series Measurements off Peru – A Cooperation between SFB 754 and IMARPE. SFB 754 Evaluation, Kiel, 01.-

02.09.2011.

Behrens, E., Böning, C.W. and **Biastoch, A.,** 2011: Can eddies affect the freshwater distribution and the reaction of the MOC in Greenland melting scenarios? Present and Future Change in the Meridional Overturning Circulation. International Science Meeting, Bristol, UK, 12.-15.07.2011.

Behrmann, J. H., Ullemeyer, K. and Stipp, M., 2011: Elastic anisotropy in subducted oceanic crust and sediments: estimates from a paleo-subduction channel, Eastern Alps. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Bigalke N., Kossel E., Deusner C., Savy J.-P., and **Haeckel M.,** 2011: CO₂ injection into submarine sediments: Disturbing news for methane-rich hydrates. 7th International Conference on Gas Hydrates (ICGH2011), Edinburgh, UK, 17.-21.07.2011.

Bilsley, N. A., **Fietzek, P.,** Ghamraoui, O., Mäck, A., Flury, S., Al-Farawati, R., **McGinnis, D. and Schmidt, M.,** 2011: Temporal and Spatial Variability of Methane in a Freshwater Outflow to the Baltic Sea. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Bittig, H. C., Boebel, O. and **Körtzinger, A.,** 2011: Argo-O₂ Floats in the Polar Seas - Autonomous Observation of Biogeochemical Processes at High Latitudes. DPG Physics School „Physics of the Ocean“, Bad Honnef, 11.-16.09.2011.

Bonnet, S., De Vernal, A., Henry, M., **Bauch, H.,** Husum, K., **Spielhagen, R., Van Nieuwenhove, N.** and Zamelczyk, K., 2011: Variability of hydrographic conditions and sea-ice in the Nordic seas during the Holocene. 41st Annual Arctic Workshop, Montreal, Québec, Canada, 02.03.2011.

Borisova, A. Y., **Portnyagin, M.,** Toutain, J. P., Stefansson, A., Gouy, S. and de Parseval, P., 2011: Processes Triggering Explosive Eruption of Mantle Plume-Derived Magma. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Botcharnikov, R., Shishkina, T., Almeev, R., Holtz, F. and **Portnyagin, M.**, 2011: Evaluation of storage conditions and degassing processes for natural magmas: an effective combination of natural observations and experimental methods. KALMAR - Second Bilateral Workshop on Russian-German Cooperation on Kurile-Kamchatka and Aleutian Marginal Sea-Island Arc Systems, Trier, 16.05.-20.05.2011.

Boucher, E., Halfar, J., Williams, B., **Hetzinger, S.**, Steneck, R. S. and Adey, W., 2011: Changes in coralline algal calcification as a possible indicator of sub-arctic ocean acidification. 10th Advances in Earth Science Research Conference, AESRC, Ottawa, Canada, 25.-27.03.2011.

Brandt, P., Funk, A., Hormann, V., Dengler, M., Greatbatch, R. J. and Toole, J. M., 2011: Interannual atmospheric variability forced by the deep equatorial Atlantic Ocean. WCRP OSC Climate Research in Service to Society, Denver, USA, 24.-28.10.2011.

Brötz, E., Herrmann, J., Maier, A., Kelter, G., **Wiese, J.**, Zinecker, H., **Imhoff, J. F.**, Müller, R. and Paululat, T., 2011: Structure-activity-relationship of Grecoketidone and related naphthoquinones. VAAM-Jahrestagung 2011, Karlsruhe, 03.-06.04.2011.

Bubenshchikova, N., **Nürnberg, D.**, Tiedemann, R. and Lembke-Jene, L., 2011: Variations of an oxygen minimum zone in the Okhotsk Sea over the last glacial-interglacial cycle as recorded by benthic foraminiferal and sedimentological data. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Bubenshikova, N., **Nürnberg, D.** and Tiedemann, R., 2011: Spatial and temporal variability of an oxygen minimum zone in the marginal NW-Pacific during the last deglaciation to Holocene: indications from benthic foraminiferal and biogeochemical data. KALMAR - Second Bilateral Workshop on Russian-German Cooperation on Kurile-Kam-

chatka and Aleutian Marginal Sea-Island Arc Systems, Trier, 16.-20.05.2011.

Buchs, D., **Cukur, D.** and Masago, H., 2011: Provenance analysis of sediments using cuttings samples from the Kumano Forearc Basin (Site C0009). IODP 319&322 Post Cruise Meeting, Barcelona, Spain, 26.09. - 28.09. 2011.

Bumke, K., Strehz, A., Schröder, M. and Fennig, K., 2011: Detection of precipitation over the sea in satellite climatologies. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Büdenbender, J., Lischka, S., Schulz, K. and Riebesell, U., 2011: Pteropods under the impact of ocean acidification and warming: a novel approach of calcification rate measurements in pre-winter *Limacina helicina* and effects on overwintering *L. helicina* and *L. retroversa*. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Büdenbender, J., Riebesell, U. and Form, A., 2011: Calcification and carbonate dissolution of an Arctic coralline red algae exposed to ocean acidification. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Charvis, P., Evain, M., Galve, A., Laigle, M., Ruiz, M., **Kopp, H.**, Hirn, A. and **Flueh, E.**, 2011: Structure of the Lesser Antilles subduction zone from seismic refraction tomography. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Cherepanova, M., Gorbarenko, S., Malakhov, M. and **Nürnberg, D.**, 2011: Diatom stratigraphy and paleoceanography of the Western Bering Sea over the past 170ka. KALMAR - Second Bilateral Workshop on Russian-German Cooperation on Kurile-Kamchatka and Aleutian Marginal Sea-Island Arc Systems, Trier, 16.-20.05.2011.

Chuang, P. C., **Dale, A. W., Wallmann, K.**, Yanf, T. F., Chen, N. J., Lin, S., Masumoto, R., Hiruta, A., Sun, C. H. and You, C. F., 2011: Carbon isotopic evidence for coupled sulfate reduction-methane oxidation and numerical simulation results in offshore SW Taiwan. 7th International Conference on

Gas Hydrates (ICGH 2011), Edinburgh, Scotland, United Kingdom, 17.-21.07.2011.

Cisternas-Nuevo, C., Lee, C., and **Engel, A.**, 2011: Measurements of proteinaceous and polysaccharide-rich particles produced by bubbling phytoplankton exudates. ASLO Aquatic Sciences Meeting, San Juan, Puerto Rico, USA, 13.-18.02.2011.

Cukur, D., Buchs, D. and Horozal, S., 2011: Preliminary interpretation of structural and stratigraphic evolution of Kumano Forearc Basin. IODP 319&322 Post Cruise Meeting, Barcelona, Spain, 26.- 28.09.2011.

Cukur, D. and Horozal, S., 2011: Predicting sediment physical properties from seismic multi-attributes at site C009A, Kumano Forearc Basin, Japan. IODP 319&322 Post Cruise Meeting, Barcelona, Spain, 26.- 28.09.2011.

Cukur, D., Krastel, S. and Winkelmann, D., 2011: Sedimentary processes in Lake Van: first results from a joint interpretation of seismic and drilling data. 1. PALEOVAN Post Drill Science Meeting, Zürich, Switzerland, 05.-06.09.2011.

Cukur, D., Krastel, S., Winkelmann, D., Wonik, T. and Litt, T., 2011: Sedimentary processes in Lake Van: first results from a joint interpretation of seismic and drilling data. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Cukur, D., Krastel, S., Wonik, T. and Litt, T., 2011: Sedimentary processes in Lake Van: first results from a joint interpretation of seismic and drilling data. IODP/ICDP Kolloquium, 14.-16.03.2011, Münster.

Czerny, J., Bellerby, R., Boxhammer, T., Engel, A., **Ludwig, A., Nachtigall, K.**, Nondal, G., Silyakova, A., Sswat, M. and **Riebesell, U.**, 2011: Element budgets in an Arctic mesocosm CO₂ perturbation study. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Dannowski, A., Grevemeyer, I., Flueh, E. R., Thorwart, M. and Rabbel, W., 2011: Crustal structure from teleseismic P-wave receiver function

analysis in the Maule Region, Central Chile. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Dannowski, A., Grevenmeyer, I. and Ranero, C. R., 2011: Oceanic Core Complex die off and generation of enhanced mantle upwelling on the Mid-Atlantic Ridge - 22° N. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Dengg, J. and Soria-Dengg, S., 2011: Outreach in ocean sciences as a direct contribution to education. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Deppe, J., van den Bogaard, P., Hauff, F., Hoernle, K., Werner, R., O'Connor, J., Fietzke, J. and Jokat, W., 2011: New ⁴⁰Ar/³⁹Ar geochronological evidence for a hotspot chain origin of the Walvis Track. SPP 1375 Colloquium, Potsdam, 07.06. - 10.06.2011.

Derkachev, A. N., Nikolaeva, N. A., Gorbarenko, S. A., **Portnyagin, M. V.**, Ponomareva, V. V., Sakho, V. G., **Nürnberg, D.**, Sakamoto, T., Iijima, K., Liu, H., Wang, K. and Chen, Z., 2011: Volcanic ash layers in the Okhotsk Sea Holocene-Pleistocene deposits. 7. Biennial Workshop on Japan-Kamchatka-Alaska Subduction Processes: Mitigating Risk through International Volcano, Earthquake, and Tsunami Science (JKASP-2011), Petropavlovsk-Kamchatsky, Russia, 25.-30.08.2011.

Derkachev, A., **Portnyagin, M.**, Ponomareva, V., Gorbarenko, S., Malakhov, M., **Nürnberg, D.**, **Riethdorf, J. R.**, Tiedemann, R. and **van den Bogaard, C.**, 2011: Marker tephra layers in the Holocene-Pleistocene deposits of the Bering Sea and the north-western Pacific Ocean. KALMAR - Second Bilateral Workshop on Russian-German Cooperation on Kurile-Kamchatka and Aleutian Marginal Sea-Island Arc Systems, Trier, 16.-20.05.2011.

Deusner C., Bigalke N., Kossel E., Savy J.-P., and **Haeckel M.**, 2011: Simulating CO₂ injection into submarine, CH₄-hydrate bearing sediments in

high-pressure experiments. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Dirksen, O., **van den Bogaard, C.**, Danhara, T. and Diekmann, B., 2011: Sharp tectonic and volcanic unrest at 2800-2900 ¹⁴C BP - evidence from river terrace and monogenetic volcanoes dating. 7. Biennial Workshop on Japan-Kamchatka-Alaska Subduction Processes: Mitigating Risk through International Volcano, Earthquake, and Tsunami Science (JKASP-2011), Petropavlovsk-Kamchatsky, Russia, 25.-30.08.2011.

Dullo, W. C., 2011: KALMAR: "Kurile-Kamchatka and Aleutian Marginal Sea-Island Arc Systems: Geodynamic and Climate Interaction in Space and Time": an Integrated Polar Science Approach between Russia and Germany. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Dullo, W. C., Flögel, S., Rüggeberg, A. and Mienis, F., 2011: Ocean Chemistry reflected in Cold Water Coral Reef Occurrences. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Dullo, W. C. and Shapovakov, S., 2011: Hydrography of the NW Pacific off Kamchatka and of the SW Bering Sea. KALMAR - Second Bilateral Workshop on Russian-German Cooperation on Kurile-Kamchatka and Aleutian Marginal Sea-Island Arc Systems, Trier, 16.-20.05.2011.

Duteil, O., Lazar, A. and **Oschlies, A.**, 2011: Realistic representation of light penetration in the upper ocean improves the representation of a structure coupled to the Atlantic Meridional Mode: the Guinea Dome". EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Duteil, O., Oschlies, A. and **Koeve, W.**, 2011: Actual oxygen and suboxia representations: comparison of different ocean general circulation models. EUR-OCEANS Conference - Ocean deoxygenation and implications for marine biogeochemical cycles and ecosystems, Toulouse, France, 24.-26.10.2011.

Dörfler, W. and **van den Bogaard, C.**, 2011: New

records from old tephra from Northern Germany. 18. INQUA-Congress, Quaternary Sciences - The View From The Mountains, Bern, Switzerland, 21.-27.07.2011.

Fiedler, B., Fietzek, P., Vieira, N., Kozlova, E., Heimann, M. and **Körtzinger, A.**, 2011: High-Quality CO₂ and O₂ Measurements from a Profiling Float at the Cape Verde Observatory (CVO). 4. Annual SOPRAN Meeting, Heidelberg, 22.-23.03.2011.

Fischer, T., Dengler, M., Brandt, P., Visbeck, M., Banyte, D., Krahmann, G., Karstensen, J., Kock, A. and **Bange, H.**, 2011: Oxygen and nitrous oxide fluxes at the oxygen minimum zone off West Africa. EUR-OCEANS Conference - Ocean deoxygenation and implications for marine biogeochemical cycles and ecosystems, Toulouse, France, 24.-26.10.2011.

Fleischer, D., Jannaschk, K., **Mehrtens, H., Schirnick, C.** and **Springer, P.**, 2011: A Generic Data Model - From File Confusion to Database. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Floegel, S., Wallmann, K. J. G., Poulsen, C., Zhou, J., **Oschlies, A., Voigt, S.** and Kuhnt, W., 2011: Biogeochemical effects of volcanic degassing on the oxygen-state of the oceans during the Cenomanian/Turonian Anoxic Event 2. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Form, A., Holtmann, W., Piepenburg, D., Bleich, M., and **Riebesell, U.**, 2011: Acclimation effects of ocean acidification in the cold-water coral *Lophelia pertusa* and first investigations of single-channel activities. 2nd BIOACID annual meeting, Bremen, 26.-30.09.2011.

Frank, M., Grasse, P., Ehlert, C., Stichel, T. and **Stramma, L.**, 2011: Distribution of neodymium and silicon isotopes in Eastern Equatorial Pacific seawater. 3rd GEOTRACES Data Model Synergy Workshop, Barcelona, Spain, 14.-17.11.2011.

Franz, J., Krahmann, G., Lavik, G., Grasse, P. and **Riebesell, U.**, 2011: Distribution of phytoplankton in the tropical Eastern South Pacific in relation to hydrographic and nutrient conditions. EGU General Assembly, Vienna, Austria, 03.-08.04.2011.

Frommel, A., Maneja, R., Lowe, D., Geffen, A., Folkvord, A., **Piatkowski, U.** and **Clemmesen, C.**, 2011: Harmful effects of ocean acidification in a commercially important fish larvae: Atlantic Cod. EPOCA Third Annual Meeting, Royal Academy of Belgium for Science and the Arts, Brussels, Belgium, 09.-13.05.2011.

Frommel, A., Maneja, R., Michael, K., Geffen, A., Lowe, D., **Malzahn, A.**, Geffen, A., Folkvord, A., **Hermann, B., Piatkowski, U.**, Lucassen, M. and **Clemmesen, C.**, 2011: CO₂ in the future. 2. Annual Meeting of BIOACID, Bremen, 26.-30.09.2011.

Geersen, J., Behrmann, J. H., Völker, D., Weinrebe, W., Krastel, S. and Reichert, C., 2011: Giant submarine slope failures off Southern Chile and their implications for seismogenic behavior of convergent continental margins. IGCP585 5. International Symposium, Submarine Mass Movements and Their Consequences, Kyoto, Japan, 24.-26.10.2011.

Geldmacher, J., Höfig, T., Hauff, F., Hoernle, K. and Garbe-Schönberg, D., 2011: Evidence for influence of the Galápagos hotspot on the East Pacific Rise MORB composition during times of superfast spreading. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Getzlaff, K., Lehmann, A. and **Hinrichsen, H.-H.**, 2011: The response of the Baltic Sea to climate variability. 8th Baltic Sea Science Congress, ICES Annual Science Conference, Gdansk, Poland, 20.09.2011.

Gilbert, D., Freundt, A. and **Kutterolf, S.**, 2011: Magmatic evolution of the two caldera-forming eruptions of the Apoyo Caldera, Nicaragua.

XXV IUGG General Assembly, Session V03, Melbourne, Australia, 28.06.-07.07.2011.

Giraudeau, J., Garcia, J., Dylmer, C. V., Husum, K., **Werner, K., Spielhagen, R. F.**, Müller, J., Moros, M. and Risebrobakken, B., 2011: Coccolith-Carbonate Sedimentation in the Northern North Atlantic: an Holocene Perspective. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Goecke, F. R., Labes, A., Wiese, J. and **Imhoff, J. F.**, 2011: Bacteria associated with coexisting macroalgae: seasonal, interspecies variation and antibiotic effects. VAAM-Jahrestagung 2011, Karlsruhe, 03.-06.04.2011.

Goecke, F. R., Labes, A., Wiese, J. and **Imhoff, J. F.**, 2011: Insights supporting the proposal of possible 'symbiotic role' of marine bacteria on macroalgae. MIMAS Symposium, Greifswald, 06.-08.07.2011.

Gorbach, N. and **Portnyagin, M.**, 2011: Geochemistry and mineralogy of the Late Pleistocene Old Shiveluch Volcano, Kamchatka. 7. Biennial Workshop on Japan-Kamchatka-Alaska Subduction Processes: Mitigating Risk through International Volcano, Earthquake, and Tsunami Science (JKASP-2011), Petropavlovsk-Kamchatsky, Russia, 25.-30.08.2011.

Gorbach, N. and **Portnyagin, M.**, 2011: Evolution of the Late Pleistocene Old Shiveluch Volcano, Kamchatka. KALMAR - Second Bilateral Workshop on Russian-German Cooperation on Kurile-Kamchatka and Aleutian Marginal Sea-Island Arc Systems, Trier, 16.-20.05.2011.

Gottschalk, J., Tiedemann, R., Schulz, M., **Riethdorf, J. R.** and Max, L., 2011: Lamminierte Sedimentintervalle offenbaren Timing und Antrieb von Klimawandel in der Beringsee während der letzten Deglaziation. Statusseminar Meeresforschung mit FS Sonne 2011, Hannover, 09.-10.02.2011.

Grevemeyer, I., Villasenor, A. and **Leuchters, W.**, 2011: Seismotectonics of the Alboran domain, Western Mediterranean - active shallow

tectonics and deep-seated shadows of the past. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Grombik-Suwala, I., Tanhua, T., Mehrrens, H. and Alvarez, M., 2011: Collected Data? Did you QC the data and submit to a data centre?. 2. Young Scientist Excellence Cluster Conference on Marine and Climate Research, Bremen, 04.-05.10.2011.

Großmann, K., Frieß, U., Tschritter, J., Peters, E., Wittrock, F., **Quack, B., Krüger, K.**, von Glasow, R., Sommariva, R., Pfeilsticker, K. and Platt, U., 2011: Shipborne MAX-DOAS Measurements of Reactive Halogen Species over the Western Pacific and the Eastern North Atlantic. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Großmann, K., Frieß, U., Tschritter, J., Peters, E., Wittrock, F., **Quack, B., Krüger, K.**, von Glasow, R., Sommariva, R., Pfeilsticker, K. and Platt, U., 2011: Shipborne MAX-DOAS Measurements of Reactive Halogen Species over the Western Pacific and the Eastern North Atlantic. SONNE Statusseminar, Hannover, 09.02.2011.

Gröner, F., **Lenz, M., Wahl, M.** and Jenkins, S. R., 2011: Veni, vidi, vici: Stress resistance in native vs. non-native ascidians. 2. Young Marine Research network meeting „Oceans amidst science, innovation and society“, Bremerhaven, 07.-09.09.2011.

Hahn, J., Brandt, P., Körtzinger, A., Krahmann, G., Karstensen, J., Schlundt, M. and **Funk, A.**, 2011: Mesoscale and finescale oxygen variability at the southern edge of the tropical north east Atlantic Ocean oxygen minimum zone. EUR-OCEANS Conference - Ocean deoxygenation and implications for marine biogeochemical cycles and ecosystems, Toulouse, France, 24.-26.10.2011.

Halama, R., John, T., Herms, P., Schenk, V., Garbe-Schönberg, D. and **Hauff, F.**, 2011: Magmatic signatures and metasomatism in the high-

pressure metamorphic Raspas Complex, Ecuador. ILP Task force IX Workshop "Nature of the plate interface in subduction zones", Western Alps, Italy, 02.-07.07.2011.

Halama, R., Savov, I. P., Garbe-Schönberg, D. and Toulkeridis, T., 2011: Origin of vesuvianite-bearing layers from the Raspas Complex, Ecuador. Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Hansteen, T.H., Bredemeyer, S., Garofalo, K., Peña, P., **Rüpke, L.,** Mora Stock, C., Dzierma, Y., Rabbell, W., Bataille, K., Gil Cruz, F., 2011: The Influence Of Earthquakes On Degassing At Villarica Volcano, Chile. AGU Fall Meeting 2011, 05.-09.12.2011, San Francisco, USA.

Harders, R., Ranero, C. R. and **Weinrebe, W.,** 2011: Submarine land sliding on the continental slope off Central America and the influence of long-term tectonic erosion. ESF Research Conference on Understanding Extreme Geohazards, Sant Feliu de Guixols, Spain, 27.11.-02.12.2011.

Harlay, J., Chou, L., De Bodt, C., Van Oostende, N., **Piontek, J., Engel, A.,** Sabbe, K., Groom, S., and Borges, A. V., 2011: Biogeochemistry and carbon mass balance of a coccolithophore bloom in the northern Bay of Biscay (June 2006). EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Hathorne, E. C., Stichel, T., Grasse, P. and Frank, M., 2011: Online preconcentration ICP-MS analysis of rare earth elements in seawater. Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Hauff, F., Hoernle, K., Kokfelt, T., Haase, K., Garbe-Schönberg, D. and **Werner, R.,** 2011: Chemical Heterogeneities along the South Atlantic Mid-Ocean-Ridge (5-11°S): Shallow or Deep Recycling of Ocean Crust?. Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Hegglin, M. I., **Tegtmeier, S.,** Anderson, J., Brohede, S., Froidevaux, L., Fuller, R., Funke, B.,

Gille, J., Jones, A., Kasai, Y., Kyröla, E., Lingenfeller, G., McLinden, C., Neu, J., Remsberg, E., Rozanov, A., Smith, L., **Toohy, M.,** Urban, J., von Clarmann, T., Walker, K. A. and Wang, R., 2011: The SPARC Data Initiative Overview. WCRP OSC Climate Research in Service to Society, Denver, USA, 24.-28.10.2011.

Hegglin, M. I., **Tegtmeier, S.,** Anderson, J., Brohede, S., Froidevaux, L., Fuller, R., Funke, B., Gille, J., Jones, A., Kasai, Y., Kyröla, E., Lingenfeller, G., McLinden, C., Neu, J., Remsberg, E., Rozanov, A., Smith, L., **Toohy, M.,** Urban, J., von Clarmann, T., Walker, K. A. and Wang, R., 2011: The SPARC Data Initiative – Climatology comparisons for water vapour, methane, CO, CFC-11, CFC-12, SF₆, HO₂, OH, and CH₂O. WCRP OSC Climate Research in Service to Society, Denver, USA, 24.-28.10.2011.

Heim, B., Doerffer, R., Overduin, P., Lantuit, H., Hoelemann, J., **Kassens, H. and Wegner, C.,** 2011: OCoc-from Ocean Colour to Organic Carbon. 31st EARSel Symposium, Prague, Czech Republic, 30.05.-02.06.2011.

Heincke, B., Moorkamp, M., Jegen, M. and Hobbs, R. W., 2011: Joint inversion scheme with an adaptive coupling strategy - applications on synthetic and real data sets. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Heincke, B., Moorkamp, M., Jegen, M., Hobbs, R. W. and **Chen, J.,** 2011: Adaptive coupling strategy for joint inversions that use petrophysical information as constraints. 3rd Schmucker-Weidelt Kolloquium, Neustadt a.d. Weinstrasse, 26.-30.09. 2011.

Herbrich, A., Hoernle, K., Hauff, F., Werner, R. and Garbe-Schönberg, D., 2011: SO208 PLUMEFLUX: Erste Ergebnisse der Haupt- und Spurenelementanalytik an vulkanischen Gläsern von Seamounts und dem Cocos-Nazca-Spreizungszentrum im zentralen Ostpazifik. Statusseminar Meeresforschung mit FS Sonne 2011, Hannover,

09.-10.02.2011.

Herbrich, A., Hoernle, K., Hauff, F., Werner, R. and Garbe-Schönberg, D., 2011: Temporal variations in Galápagos plume-ridge interaction at the Cocos-Nazca spreading center. Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Heuer, L., Frank, M., Eisenhauer, A. and Christl, M., 2011: Tracing water masses with radiogenic isotopes: Water column and Fe-Mn crust records from the eastern equatorial Pacific Ocean. Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Hoernle, K., Herbrich, A., Hauff, F., Werner, R. and Garbe-Schönberg, D., 2011: Temporal and Spatial Variations in Galapagos Plume-Ridge Interaction. Chapman Conference on The Galápagos as a Laboratory for the Earth Sciences, Puerto Ayora, Galápagos, Ecuador, 25.-30.07.2011.

Hoppe, H. G., Gocke, K. and Koppe, R., 2011: Relationship between bacterial leucine turnover and Leu-aminopeptide hydrolysis in the meridional profile of the Atlantic Ocean. 4. International conference Enzymes in the Environment: Activity, Ecology and Application, Bad Nauheim, 17.-21.07.2011.

Hoppe, H. G. and Siuda, W., 2011: The career of the Lifetime achievement in aquatic enzymology award 2011 winner, Prof. Dr. Ryszard John Chróst, in pictures. 4. International conference Enzymes in the Environment: Activity, Ecology and Application, Bad Nauheim, 17.-21.07.2011.

Hölz, S. and Jegen, M., 2011: Five years of marine research using EM methods at the IFM-GEOMAR. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Hölz, S. and Jegen, M., 2011: The resistivity structure of the North Alex Mud Volcano from marine CSEM measurements. 71. Jahrestagung der Deutschen Geophysikalischen Gesellschaft gemeinsam mit der Arbeitsgemeinschaft Extrater-

restrische Forschung, Köln, 21.-24.02.2011.

Ivanova, E., Ovsepyan, E., Murdmaa, I., Max, L., **Riethdorf, J. R., Nürnberg, D.**, Tiedemann, R. and Alekseeva, T., 2011: Millennial environmental variability on Shirshov Ridge, Bering Sea, during the penultimate and last glacial cycles. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Iyer, K., Ruepke, L. and Grevemeyer, I., 2011: Bend-faulting, serpentinization and double seismic zones: new insights from reaction-transport modeling. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Jansen, N. and Imhoff, J. F., 2011: Chlorazaphilone isolated from *Bartalinia robillardoides*. 4. Congress of European Microbiologists, FEMS 2011, Genf, Switzerland, 26.-30.06.2011.

Jin, L., Schneider, B. and **Park, W.**, 2011: The evolutionary response of the South and East Asian summer monsoon climate to orbital forcing in transient simulation of the Holocene with a coupled climate model. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Kalvelage, T., Contreras, S., Paulmier, A., **LaRoche, J., Stramma, L., Frank, M.**, Lavik, G. and Kuypers, M., 2011: Mapping the spatial variability of N-cycle pathways in the OMZ off Peru. Ocean Deoxygenation Meeting - Ocean deoxygenation and implications for marine biogeochemical cycles and ecosystems conference, Toulouse, France, 24.-26.10.2011.

Kandiano, E., Bauch, H. A., Fahl, K. and Helmke, J. P., 2011: Intensification Changes of the Inter-glacial Subpolar Gyre System in the North Atlantic Region. INQUA 2011, Bern, Switzerland, 21.-27.07.2011.

Kandiano, E., Bauch, H. A., Fahl, K. and Helmke, J. P., 2011: Interglacial Variations in Meridional SST Gradients across the Eastern North Atlantic Sector. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Kanzow, T., Krahmann, G., Karstensen, J., Ohde, T., **Funk, A. and Müller, M.**, 2011: Glider fleet-based, multi-parameter observations in the tropical Northeast Atlantic. EGU General Assembly 2011, Vienna, Austria, 06.04.2011.

Karstensen, J., Villargarcia, M., Kemena, T., **Körtzinger, A.** and Llinas, O., 2011: Seasonal and interannual variability of mixed layer nitrate in the central Irminger Sea. ICES/NAFO Symposium on the Variability of the North Atlantic and its Marine Ecosystems during 2000-2009, Santander, Spain, 10.-12.05.2011.

Karstensen, J., Visbeck, M., Pinck, A., Oesterhus, S. and Busack, M., 2011: Data telemetry systems to access climate sensitive data from moored instrumentation. ICES/NAFO Symposium on the Variability of the North Atlantic and its Marine Ecosystems during 2000-2009, Santander, Spain, 10.-12.05.2011.

Khelifi, N., Frank, M. and Nürnberg, D., 2011: Changes in North Atlantic deep water circulation, 3.3 - 3.0 Ma. AGU Fall Meeting 2011, San Francisco, California, USA, 05.-09.12.2011.

Khon, V., Jin, L., Schneider, B., **Park, W., Latif, M.** and Mokhov, I., 2011: The Hadley, Walker and monsoon circulations and their implications for the hydrological cycle during warm climates from transient coupled simulations. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Koeve, W., Dietze, H., Duteil, O. and Oeschlies, A., 2011: Evaluating coupled ecosystem ocean circulation models: can we trust the concept of preformed nutrients?. EUR-OCEANS Conference - Ocean deoxygenation and implications for marine biogeochemical cycles and ecosystems, Toulouse, France, 24.-26.10.2011.

Koeve, W., Kim, H. C., Lee, K. and **Oeschlies, A.**, 2011: The potential impact of DOM accumulation on computed $f\text{CO}_2$, carbonate ion concentrations, and omega in ocean acidification experiments. EGU General Assembly 2011, Vienna, Austria,

03.-08.04.2011.

Kopp, H., Djajadihardja, Y., **Flueh, E. R., Klaeschen, D.**, Mueller, C., **Planert, L.**, Reichert, J. C., **Shulgin, A. and Wittwer, A.**, 2011: Seismic rupture and tsunami hazard of the Java margin in relation to plate interface geometry. GeoPrisms Meeting, Bostrop, Texas, USA, 05.-07.01.2011.

Kopp, H., Weinzierl, W., Laigle, M., **Flueh, E. R.**, Hirn, A., **Klaeschen, D. and Papenberg, C.**, 2011: Composition and deep structure of island arc crust in the central Lesser Antilles: Insights for the formation of continental crust. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Kopp, H., Weinzierl, W., Laigle, M., **Flueh, E. R.**, Hirn, A., **Klaeschen, D. and Papenberg, C.**, 2011: Formation of continental crust: Insights from island arc crustal structure. 71. Jahrestagung der Deutschen Geophysikalischen Gesellschaft, Köln, 21.-24.02.2011.

Krabbenhöft, A., Weinrebe, W., Kopp, H., Flueh, E., Ladage, S., **Papenberg, C. and Planert, L.**, 2011: Morphological structures relate to the location and extent of the seismogenic zone - bathymetric studies of the Sunda margin, Indonesia. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Kraft, S., Hathorne, E., Frank, M. and Weld-eab, S., 2011: Influence of different cleaning methods on seawater δNd extracted from planktonic foraminifera. Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Kramer, A., Labes, A., Wiese, J., Ohlendorf, B. and Imhoff, J. F., 2011: Secondary metabolites of fungi associated to the marine sponge *Halichondria panacea*. MIMAS Symposium, Greifswald, 06.-08.07.2011.

Krashenninnikov, S. and **Portnyagin, M. V.**, 2011: Parental melts of Avachinsky Volcano (Kamchatka) inferred from data on melt inclusions. KALMAR - Second Bilateral Workshop on Russian-German Cooperation on Kurile-Kamchatka and

Aleutian Marginal Sea-Island Arc Systems, Trier, 16.-20.05.2011.

Krasnova, E., **Portnyagin, M.**, Silantiev, S. A., **Werner, R.**, **Hauff, F.** and **Hoernle, K.**, 2011: Ultramafic rocks from the Stalemate Fracture Zone (NW Pacific) dredged during the cruise R/V SONNE SO201-KALMAR Leg 1b. Statusseminar Meeresforschung mit FS Sonne 2011, Hannover, 09.-10.02.2011.

Krasnova, E., **Portnyagin, M.**, Silantiev, S., **Werner, R.** and **Hoernle, K.**, 2011: Mantle Peridotites from the Stalemate F.Z. (NW Pacific). Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Krasnova, E., **Portnyagin, M. V.**, Silantiev, S., **Werner, R.**, **Hauff, F.** and **Hoernle, K.**, 2011: Petrology and geochemistry of mantle rocks from the Stalemate Fracture Zone (NW Pacific). KALMAR - Second Bilateral Workshop on Russian-German Cooperation on Kurile-Kamchatka and Aleutian Marginal Sea-Island Arc Systems, Trier, 16.-20.05.2011.

Krebs-Kanzow, U., **Park, W.** and Schneider, B., 2011: The Climate Impact of Late Neogene Ocean Gateway Changes. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Krebs-Kanzow, U., **Park, W.** and Schneider, B., 2011: Paleo climate modelling: The Atlantic Meridional Overturning Circulation during the last deglaciation. Workshop of the COST-INTIMATE programme on the last deglaciation: towards model-data integration, Copenhagen, Denmark, 03.-04.11.2011.

Kruse, I., **Weinberger, F.**, **Ehlers, A.** and John, U., 2011: Algal induced defense: Mediated by enemy-generated molecular patterns. 5. European Phycological Congress, Rhodes, Greece, 04.-09.09.2011.

Kuvikas, O., **Portnyagin, M. V.** and Ponomareva, V. V., 2011: Compositional variations of volcanic glasses from Kamchatka. KALMAR - Second Bi-

lateral Workshop on Russian-German Cooperation on Kurile-Kamchatka and Aleutian Marginal Sea-Island Arc Systems, Trier, 16.-20.05.2011.

Labes, A. and **Imhoff, J. F.**, 2011: Genome based methods for the exploration of natural products from marine fungi for the treatment of cancer. 8. AIO-Symposium „Academic Drug Development in Oncology – Translating Basic Science Research Into Innovative Treatments“, Berlin, 16.11.2011.

Labes, A. and **Imhoff, J. F.**, 2011: Natural products from marine fungi for the treatment of cancer. VAAM-Jahrestagung 2011, Karlsruhe, 03.-06.04.2011.

Labes, A., **Nagel, K.**, **Schneemann, I.**, **Wiese, J.** and **Imhoff, J. F.**, 2011: From marine ecology to marine biotechnology – Small bioactive molecules in biological interactions and biotechnological applications. Clusterretreat Future Ocean, Schleswig, 28.-29.03.2011.

Landolfi, A., **Dietze, H.**, **Koeve, W.** and **Oschlies, A.**, 2011: Implications of deoxygenation on the marine N inventory. EUR-OCEANS Conference - Ocean deoxygenation and implications for marine biogeochemical cycles and ecosystems, Toulouse, France, 24.-26.10.2011.

Landolfi, A., **Dietze, H.** and **Oschlies, A.**, 2011: Trade-Offs in modeled phosphorus acquisition strategies and the marine N₂ fixation paradox. ASLO Aquatic Sciences Meeting, San Juan, Puerto Rico, USA, 13.-18.02.2011.

Langlois, R., **Mohr, W.**, **Sudhaus, S.**, Bluhm, K., Heller, M., Mosseri, J., Croot, P., Moore, C. M., and **LaRoche, J.**, 2011: N-Limitation of the Phytoplankton Community in the Mediterranean Sea, ASLO OSC, San Juan, Puerto Rico, 15.02.2011.

Laurila, T., Hannington, M. D., **Petersen, S.** and **Devey, C.**, 2011: Volcanism, hydrothermalism and tectonics of the Woodlark Basin. GAC-MAC Joint Annual Meeting, Ottawa, Canada, 27.05.2011.

Lembke-Jene, L., Tiedemann, R., **Nürnberg, D.**, Bubenshchikova, N. and **Dullo, W. C.**, 2011: Paleooceanographic changes in the Okhotsk Sea during the past 25,000 years - implications for ventilation of North Pacific intermediate water and stratification patterns. AGU Fall Meeting 2011, San Francisco, California, USA, 05.-09.12.2011.

Leuchters, W., **Grevenmeyer, I.**, Ranero, C. R., Villasenor, A., Booth-Rea, G. and Gallart, J., 2011: Seismotectonics and Seismic Structure of the Alboran Sea, Western Mediterranean – Constraints from Local Earthquake Monitoring and Seismic Refraction and Wide-Angle Profiling. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Levitan, M., Kuzmina, T., Roshchina, I., Syromyatnikov, K., Tiedemann, R., **Nürnberg, D.** and Max, L., 2011: First results of component, grain-size and XRF analyses for sediment core SO201-2-101-KL (Shirshov Ridge). KALMAR - Second Bilateral Workshop on Russian-German Cooperation on Kurile-Kamchatka and Aleutian Marginal Sea-Island Arc Systems, Trier, 16.-20.05.2011.

Lindhorst, K., **Krastel, S.**, Schwenk, T., **Grün, M.** and Wagner, B., 2011: A hydroacoustic data set from pre-site surveys for the SCOPSCO ICDP-campaign in Lake Ohrid. IODP/ICDP Kolloquium, 14.-16.03.2011, Münster.

Lohbeck, K., **Riebesell, U.**, and **Reusch, T. B. H.**, 2011: Rapid evolution of a key phytoplankton species: 500 generations in a high CO₂ world. 3. Status Symposium of the Volkswagen Foundation in Evolutionary Biology: Evolution at the Sea, Sylt, 07.-11.11.2011.

Lopez-Rodriguez, C., Martinez-Ruiz, F., Comas, M. C., **Hensen, C.**, **Piñero, E.**, Böttcher, M. E., Dellwig, O., and Lenz, C., 2011: Geochemical Evidence of Mud Volcano Activity in the West Alboran Sea. Goldschmidt 2011, Prague, Czech Republic, 14.-19.08.2011.

Mahlke, J., **Devey, C. W.**, **Hauff, F.**, **Hoern-**

le, K., Portnyagin, M., Speckbacher, R. and Garbe-Schönberg, D., 2011: Mantle heterogeneities along the propagating spreading center of the Woodlark Basin. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Mahlke, J., Devey, C. W., Hoernle, K. and Garbe-Schönberg, D., 2011: Geochemistry of volcanic rocks from the Woodlark Basin. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011. Malakhov, M., Gorbarenko, S., **Nürnberg, D., Tiedemann, R.**, Malakhova, G. and **Riethdorf, J. R.**, 2011: Geomagnetic relative paleointensity of sediment cores of the Western Bering Sea and NW Pacific. KALMAR - Second Bilateral Workshop on Russian-German Cooperation on Kurile-Kamchatka and Aleutian Marginal Sea-Island Arc Systems, Trier, 16.-20.05.2011.

Malakhov, M., Gorbarenko, S., **Nürnberg, D., Tiedemann, R.**, Malakhova, G., **Riethdorf, J. R.**, Bosin, A. and Cherepanova, M., 2011: Climate change, sea ice and productivity responses in magnetic parameters of sediments from Western Bering Sea and NW Pacific. KALMAR - Second Bilateral Workshop on Russian-German Cooperation on Kurile-Kamchatka and Aleutian Marginal Sea-Island Arc Systems, Trier, 16.-20.05.2011.

Maneja, R., Piatkowski, U. and Melzner, F., 2011: Effects of ocean acidification on statolith calcification and prey capture in early life cuttlefish, *Sepia officinalis*. EuroCeph 2011 Cephalopod Biology Research in the 21st Century – A European Perspective, Vico Equense, Italy, 07.-10.04.2011.

Martin, T., Park, W. and Latif, M., 2011: Two types of multi-centennial variability of the Southern Ocean deep convection: How sea ice tips the scale. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Max, L., **Riethdorf, J. R.**, Tiedemann, R., **Nürnberg, D.** and Abelman, A., 2011: Late Pleistocene to Holocene sea surface temperature development in the NW-Pacific and its marginal seas.

AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Mecking, J., Hetzinger, S., Halfar, J., **Keenlyside, N. S.**, Kronz, A., Steneck, R. S., Adey, W. H. and Lebednik, P. A., 2011: Marine proxy evidence linking decadal North Pacific and Atlantic climate. AGU Fall Meeting 2011, San Francisco, USA, 04.-09.12.2011.

Mehrtens, H., Springer, P., Fleischer, D., Schirnick, C. and Jannaschk, K., 2011: Components and Aspects of an Integrated Data Management Approach. Data Repositories In Environmental Sciences, Rauischholzhausen/Marburg, 28.02.-01.03.2011.

Mildner, T.C., Eden, C. and Nürnberg, D., 2011: Loop Current variability due to wind stress and reduced sea level during the Last Glacial Maximum (LGM). ECC2011 (Excellence Cluster Conference 2011), Bremen, 04.-05.10.2011.

Mironov, N. and **Portnyagin, M.**, 2011: Volatiles (H₂O, CO₂, S, Cl, F) in Primary Magmas of Klyuchevskoy Volcano (Kamchatka). Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Mironov, N. and **Portnyagin, M. V.**, 2011: Deep roots of Klyuchevskoy volcano, Kamchatka. KALMAR - Second Bilateral Workshop on Russian-German Cooperation on Kurile-Kamchatka and Aleutian Marginal Sea-Island Arc Systems, Trier, 16.-20.05.2011.

Mironov, N. and **Portnyagin, M. V.**, 2011: Volatile flux from Klyuchevskoy Volcano, Kamchatka. KALMAR - Second Bilateral Workshop on Russian-German Cooperation on Kurile-Kamchatka and Aleutian Marginal Sea-Island Arc Systems, Trier, 16.-20.05.2011.

Molina-Kescher, M., Frank, M. and Nürnberg, D., 2011: Present day Nd isotopic composition of seawater and sediment leaches from the Pacific sector of the Southern Ocean. AGU Fall Meeting 2011, San Francisco, California, USA, 05.-

09.12.2011.

Möller, S., Grevemeyer, I., Berndt, C., Klaeschen, D., Ranero, C. R., Sallares, V. and Zitellini, N., 2011: Asymmetric rifting and structures of conjugated margins in the Tyrrhenian Sea. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Möller, S., Grevemeyer, I., Klaeschen, D., Ranero, C. R., Sallares, V., **Berndt, C.** and Zitellini, N., 2011: Rifting of continental margins and evolution of conjugated margins in the Tyrrhenian Sea. 71. Jahrestagung der Deutschen Geophysikalischen Gesellschaft, Köln, 21.-24.02.2011.

Nürnberg, D., Kujau, A., Rieken, S., Bahr, A., Karas, C. and Ziegler, M., 2011: Mississippi freshwater discharge and terrigenous sediment supply into the northern Gulf of Mexico and Loop Current dynamics over glacial/interglacial changes. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Ohde, T., Fiedler, B., Körtzinger, A., Müller, K. and Mendes, L., 2011: Distribution of Particulate Matter in the Eastern Tropical North Atlantic observed by ARGO Floats. 4. Annual SOPRAN Meeting, Heidelberg, 22.-23.03.2011.

Osborne, A. H., Frank, M. and Tiedemann, R., 2011: The evolution of surface, intermediate and deep water connections during the closure of the Central American Seaway. ICDP/IODP Kolloquium 2011, Münster, 14.-16.03.2011.

Osborne, A. H., Frank, M. and Tiedemann, R., 2011: The evolution of surface, intermediate and deep water connections during the closure of the Central American Seaway. Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Ovsepyan, Y., Taldenkova, E., Pogodina, I. and **Bauch, H. A.**, 2011: Postglacial and Holocene environmental evolution of the Laptev Sea continental margin inferred from high-resolution records of benthic and planktic foraminifers. INQUA 2011,

Bern, Switzerland, 21.-27.07.2011.

Park, W., Biastoch, A. and Khon, V., 2011: Arctic Warming Consequences. EKC2011 - 4th EU-Korea Conference on Science and Technology, Paris, France, 21.-23.07.2011.

Patara, L., Visbeck, M., Masina, S., **Krahmann, G.** and Vichi, M., 2011: Marine biogeochemical responses to the North Atlantic Oscillation in a coupled climate model. EGU General Assembly, Vienna, Austria, 06.04.2011.

Patara, L., Böning, C.W., Biastoch, A. and **Behrens, E.**, 2011: Towards the development of a modeling framework for the study of Southern Ocean variability from interannual to multi-decadal time scales. EGU General Assembly, Vienna, Austria, 08.04.2011.

Patara, L., Böning, C.W. and **Biastoch, A.**, 2011: A modeling framework for the study of Southern Ocean variability. EGU General Assembly, Vienna, Austria, 08.04.2011.

Patara, L., Böning, C.W. and **Biastoch, A.**, 2011: Simulated response of the Antarctic Circumpolar Current to decadal wind changes, WCRP (World Climate Research Programme). Open Sciences Conference, Denver, USA, 24.11.2011.

Peeken, I., Nöthig, E., Bauerfeind, E., Bracher, A., Cherkasheva, A., **Engel, A.**, Gaebler-Schwarz, S., Kiliyas, E., Kraft, A., Metfies, K., Niehoff, B., Pfaff, S., and Wurst, M., 2011: Plankton Ecology and Biogeochemistry in a Changing Arctic Ocean (PEBCAO), first results from the AWI HAUSGARTEN area (Fram Strait). Arctic Frontiers – Arctic Tipping Points, Tromsø, Norway, 23.-28.01.2011.

Piller, I., Beyer, M., Krumbholz, M., Steinhoff, T., Körtzinger, A., and **Bange, H. W.**, 2011: A novel combined system for high-resolution underway measurements of atmospheric and dissolved nitrous oxide (N₂O) and carbon dioxide (CO₂). 4th Annual SOPRAN Meeting, Heidelberg, 22.-23.03.2011.

Piller, I., Beyer, M., Krumbholz, M., Stein-

hoff, T., Körtzinger, A., and **Bange, H. W.**, 2011: A novel combined system for high-resolution underway measurements of atmospheric and dissolved nitrous oxide (N₂O) and carbon dioxide (CO₂). Future Ocean Cluster Retreat, Schleswig, 28.-29.03.2011.

Pinero E., Hensen C., Marquardt M., Haeckel M., and **Wallmann K.**, 2011: Constraining the global distribution and amount of methane hydrates in marine sediments. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Planert, L., Behrmann, J. H., Bialas, J. and **Jegen, M.**, 2011: Seismic and magnetotelluric investigations offshore Namibia : first results of R/V Maria S. Merian Cruise MSM17/1 . DFG SPP SAMPLE Colloquium 2011, Potsdam, 07.-10.06. 2011.

Plechova, A. and **Portnyagin, M.**, 2011: Thermal State of Subducting Plate beneath Kamchatka Inferred from H₂O/Ce in Melt Inclusions. Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Plechova, A., **Portnyagin, M.** and Mironov, N., 2011: Fluxes of volatiles from volcanoes of Kamchatka. KALMAR - Second Bilateral Workshop on Russian-German Cooperation on Kurile-Kamchatka and Aleutian Marginal Sea-Island Arc Systems, Trier, 16.-20.05.2011.

Ponomareva, V., **Portnyagin, M.**, Blaauw, M., Pevzner, M. and Kyle, P. R., 2011: Variations of glass composition in the Holocene tephra of Shiveluch volcano (Kamchatka): applications for magmatic history and tephrochronology. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Ponomareva, V. V., **Portnyagin, M. V.**, Derkachev, A., Blaauw, M., Kozhurin, A., Pevzner, M., Pinegina, T., **van den Bogaard, C.** and Garbe-Schönberg, D., 2011: Tephra links for the NW Pacific, Asian mainland and Kamchatka regions. KALMAR - Second Bilateral Workshop on Russian-German Cooperation on Kurile-Kamchatka and Aleutian Marginal Sea-Island Arc Systems, Trier, 16.-

20.05.2011.

Portnyagin, M., Borisova, A. Y., Plechov, P., Shkurski, B. and Stefansson, A., 2011: Magma mixing during the 2010 Eyjafjallajökull eruption. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Portnyagin, M., Derkachev, A., Ponomareva, V. V., **van den Bogaard, C.** and Garbe-Schönberg, D., 2011: Tephra links for the NW Pacific, Asian Mainland and Kamchatka regions. Workshop on Marine Tephrochronology, Geological Society London, London, UK, 25.10.2011.

Portnyagin, M., Hauff, F., Hoernle, K., Yogodzinski, G., **Werner, R.**, Baranov, B. and Garbe-Schönberg, D., 2011: Geochemistry of primitive glasses from the Volcanologists Massif (Far Western Aleutian Arc) obtained during SO201-KALMAR. Statusseminar Meeresforschung mit FS Sonne 2011, Hannover, 09.-10.02.2011.

Portnyagin, M. V., Hauff, F., Hoernle, K., Yogodzinski, G., **Werner, R.**, Baranov, B. and Garbe-Schönberg, D., 2011: Geochemical systematics of submarine glasses from the Volcanologists Massif, Far Western Aleutian Arc . KALMAR - Second Bilateral Workshop on Russian-German Cooperation on Kurile-Kamchatka and Aleutian Marginal Sea-Island Arc Systems, Trier, 16.05.-20.05.2011.

Prada , M., Sallares, V., Ranero, C. R., Guzman, M., **Grevemeyer, I.** and Zitellini, N., 2011: Seismic study of the inner part of the Tyrrhenian basin from 2-D joint refraction and reflection travel-time tomography. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Radi, T., Bonnet, S., Comrier, M. A., De Vernal, A., Durantou, L., Faubert, E., Henry, M., Rochon, A. and **Van Nieuwenhove, N.**, 2011: Operational taxonomy for round, brown, spiny dinocysts from high latitudes of the Northern Hemisphere. 9th International Conference on Modern and Fossil Dinoflagellates, DINO9, Liverpool, Great Britain, 30.08.2011.

Reitz, A., 2011: Sub-marine CO₂ Speicherung: Einfluss auf Marine Ökosysteme. Tag der offenen Tür, IFM-GEOMAR, Kiel, 28.08.2011.

Rex, M., Immler, F., Lehmann, R., **Krüger, K.**, **Mohr, V.**, **Tegtmeier, S.** and **Wache, S.**, 2011: Hat der globale OH-Schirm ein Loch über dem westpazifischen Warm Pool?. SONNE Statusseminar, Hannover, 09.-10.02.2011.

Rickert, E., **Fischer, M.**, **Stratil, S.** and **Weinberger, F.**, 2011: Visualization, characterization and quantification of biofilm components on the surface of brown seaweeds. 1. International Conference on Marine Resources and Beyond, Bremerhaven, 05.-07.09.2011.

Riebesell, U., **von Bröckel, K.**, **Büdenbender, J.**, **Czerny, J.**, **Fischer, M.**, **Hoffmann, D.**, **Krug, S.**, **Lentz, U.**, **Ludwig, A.** and **Muche, R.**, 2011: EPOCA 2010 mesocosm CO₂ enrichment experiment in Arctic waters. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Rodehacke, C., Olsen, S., Yongqi, G., Swingedouw, D., Menary, M., **Behrens, E.**, **Biastoch, A.** and Mikolajewicz, U., 2011: First glance on simulated fresh water releases around Greenland's coast and its impacts on the ocean circulation. EGU General Assembly, Vienna, Austria, 05.04.2011.

Rudenko, O., Taldenkova, E. and **Bauch, H. A.**, 2011: Last Interglacial environments in the White Sea Region based on pollen and aquatic palynomorphs records (Bychye section). INQUA 2011, Bern, Switzerland, 21.-27.07.2011.

Ryabenko, E., 2011: Nitrogen Isotopes in OMZs. SFB 754 Retreat, Lübeck, 02.2011.

Ryabenko, E., **Wallace, D. W. R.** and Altabet, M. A., 2011: Contrasting biogeochemistry of nitrogen in the Atlantic and Pacific Oxygen Minimum Zones. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Sabine, C. L., Khatiwala, S., **Tanhua, T.**, Lee, K. and Feely, R., 2011: Increasing Anthropogenic CO₂ inventories in the Ocean. WCRP OSC Climate

Research in Service to Society, Denver, USA, 24.-28.10.2011.

Schneider, A., **Tanhua, T.**, **Wallace, D. W. R.** and **Körtzinger, A.**, 2011: Water masses and anthropogenic carbon in the tropical Atlantic. GEO-Carbon Conference: Carbon in a changing World, Rome, Italy, 25.10.2011.

Schröder, J., **Gärtner, A.**, **Imhoff, J. F.** and **Hanel, R.**, 2011: The influence of pH and ammonia on the bactericidal efficiency of seawater ozonation. Aquaculture Europe Conference 2011, Rhodes, Greece, 18.-21.10.2011.

Schumann, K., **Stipp, M.**, **Klaeschen, D.** and **Behrmann, J.**, 2011: Bender element analysis for a better understanding of rock faulting. 71. Jahrestagung der Deutschen Geophysikalischen Gesellschaft, Köln, 21.-24.02.2011.

Schumann, K., **Stipp, M.**, **Klaeschen, D.** and **Behrmann, J.**, 2011: Elastic properties of water-rich sediments from the Nankai accretionary prism. 71. Jahrestagung der Deutschen Geophysikalischen Gesellschaft gemeinsam mit der Arbeitsgemeinschaft Extraterrestrische Forschung, Köln, 21.-24.02.2011.

Schumann, K., **Stipp, M.**, **Klaeschen, D.** and **Behrmann, J.**, 2011: Ultrasonic wave velocity changes during experimental deformation of water-rich sediments from the Nankai accretionary prism (Offshore SW Japan). Gemeinsames Kolloquium der Schwerpunktprogramme ICDP - International Continental Scientific Drilling Program and IODP - Integrated Ocean Drilling Program, Münster, 14.-16.03.2011.

Schunck, H., **Desai, D.**, **Großkopf, T.**, and **LaRoche, J.**, 2011: Changes in the microbial community structure during water sampling: A case study from the Peruvian oxygen minimum zone. ASLO Aquatic Sciences Meeting, San Juan, Puerto Rico, 15.02.2011.

Schunck, H., **Desai, D.**, **Großkopf, T.**, Löscher, C., Lavik, G., Kuypers, M., Schmitz-Streit, R., and

LaRoche, J., 2011: Metagenomic and metatranscriptomic analysis of sulfidic waters within the oxygen minimum zone off Peru. SAME12, Rostock-Warnemünde, 29.08.2011.

Sett, S., **Lebrato, M.**, **Riebesell, U.** and **Schulz, K.**, 2011: The combined effect of global warming and ocean acidification on the coccolithophore *Gephyrocapsa oceanica*. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Shishkina, T., Almeev, R., Botcharnikov, R., Holtz, F. and **Portnyagin, M.**, 2011: Magma Storage Conditions of Mutnovsky Volcano, Kamchatka. Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Silantyev, S., Krasnova, E., **Portnyagin, M. V.** and Novoselov, A., 2011: Silification of peridotites from the Stalemate Fracture Zone, NW Pacific: Tectonic and geochemical applications. KALMAR - Second Bilateral Workshop on Russian-German Cooperation on Kurile-Kamchatka and Aleutian Marginal Sea-Island Arc Systems, Trier, 16.-20.05.2011.

Silber, J. and **Kajahn, I.**, 2011: Secondary metabolites from a marine *Pestalotiopsis* isolate. 4. Congress of European Microbiologists, FEMS 2011, Genf, Switzerland, 26.-30.06.2011.

Somes, C., 2011: Changes in the nitrogen cycle in the modern and glacial ocean. XVIII INQUA-Congress Quaternary sciences – the view from the mountains : XVIII International Union for Quaternary Research (INQUA)-Congress, Bern, Switzerland, 21.-27.07.2011.

Sommer, M. and **Hölz, S.**, 2011: Adaption and GPU based parallelization of the code TEMDDD for the 3D modelling of CSEM data. 71. Jahrestagung der Deutschen Geophysikalischen Gesellschaft gemeinsam mit der Arbeitsgemeinschaft Extraterrestrische Forschung, Köln, 21.- 24.02.2011.

Soria-Dengg, S. and **Dengg, J.**, 2011: Bringing the ocean to the classroom. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

- Speckbacher, R., Behrmann, J. H., Nagel, T., Stipp, M., Mahlke, J. and Devey, C. W.,** 2011: Metasomatic fault weakening processes in the Moresby Seamount detachment, Woodlark Basin (offshore Papua New Guinea). AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.
- Spielhagen, R. F.,** 2011: The Eurasian Arctic Ocean record of Late Quaternary interglacial terminations. 18. INQUA-Congress, Quaternary Sciences – The View From The Mountains, Bern, Switzerland, 21.-27.07.2011.
- Spielhagen, R. F.,** 2011: Late Quaternary Arctic Ocean records of rapid environmental change at interglacial terminations. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.
- Staufenberger, T., Klokman, V., Gärtner, A., Heind, H., Wiese, J., Labes, A. and Imhoff, J. F.,** 2011: Extracellular bacterial chitinases from marine environments. VAAM-Jahrestagung 2011, Karlsruhe, 03.-06.04.2011.
- Stepanova, A., Taldenkova, E. and **Bauch, H. A.,** 2011: Late Saalian – Eemian ostracods from the northern White Sea region. 7. European Ostracodologists' Meeting, Graz, Austria, 25.-28.07.2011.
- Stipp, M.,** 2011: Recrystallized grain size piezometry – A reappraisal based on natural and experimental data. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.
- Stipp, M., Rolfs, M., Kitamura, Y. and Behrmann, J. H.,** 2011: Structurally weak sediments indicate a high tsunami risk for the Megasplay fault of the Nankai accretionary prism (Japan). IODP/ICDP Kolloquium, 14.-16.03.2011, Münster.
- Swidinsky, A. and Edwards, R. N.,** 2011: The marine CSEM response of a steel borehole casing: Applications for the NEPTUNE Canada gas hydrate observatory. EAGE Conference, Vienna, Austria, 23.-26.05.2011.
- Swidinsky, A., Hölz, S. and Jegen, M.,** 2011: Transient electromagnetic assessment of seafloor mineral deposits: a model study. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.
- Taldenkova, E., **Bauch, H. A.,** Stepanova, A., Ovsepyan, Y., Rudenko, O. and Pogodina, I., 2011: Late Saalian – Eemian transition: a new high-resolution record of environmental changes from the northeastern White Sea Region, northern Russia. INQUA 2011, Bern, Switzerland, 21.-27.07.2011.
- Tapia, R. I., Nürnberg, D. and Frank, M.,** 2011: Reconstructing the South Pacific upper water conditions during the Late Quaternary. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.
- Tegtmeier, S.,** Hegglin, M. I., Anderson, J., Brohede, S., Froidevaux, L., Fuller, R., Funke, B., Gille, J., Jones, A., Kasai, Y., Kyröla, E., Lingenfeller, G., McLinden, C., Neu, J., Remsberg, E., Rozanov, A., Smith, L., **Toohey, M.,** Urban, J., von Clarmann, T., Walker, K. A. and Wang, R., 2011: SPARC Data Initiative – Climatology comparisons for O₃, N₂O, NO_y, NO_x, ClO, and BrO. WCRP OSC Climate Research in Service to Society, Denver, USA, 24.-28.10.2011.
- Tegtmeier, S., Krüger, K., Quack, B.,** Pisso, I. and Yang, X., 2011: The contribution of brominated and iodinated VSLS to stratospheric ozone depletion. WCRP OSC Climate Research in Service to Society, Denver, USA, 24.-28.10.2011.
- Tegtmeier, S., Quack, B., Krüger, K., Atlas, E., Petrick, G. and Wallace, D. W. R.,** 2011: VSLS transport from the surface to the stratosphere. SONNE Statusseminar, Hannover, 09.-10.02.2011.
- Teschner, C., Frank, M., Haley, B. A. and Knies, J.,** 2011: Plio-Pleistocene evolution of Arctic-Atlantic water mass exchange and erosional input in the Fram Strait. IODP/ICDP Kolloquium, Münster, 14.03.-16.03.2011.
- Thiel, V., Tank, M., Neulinger, S., Dorador, C. and Imhoff, J. F.,** 2011: Chilean highland salt lakes as promising habitats for novel anoxygenic phototrophic bacteria. 4. Congress of European Microbiologists, FEMS 2011, Genf, Switzerland, 26.-30.06.2011.
- Tiedemann, R., **Nürnberg, D.,** Max, L., **Riethdorf, J. R.,** Gottschalk, J., Abelmann, A., Gorbarenko, S., Ivanova, E. and Matul, A., 2011: Oceanic and atmospheric teleconnections between the North Pacific and the North Atlantic during the past 25 ka. KALMAR - Second Bilateral Workshop on Russian-German Cooperation on Kurile-Kamchatka and Aleutian Marginal Sea-Island Arc Systems, Trier, 16.-20.05.2011.
- Toohey, M., Gleixner, S., Krüger, K.,** Timmreck, C., Graf, H., Giorgetta, M., Karpechko, A., **Metzner, D.,** Schmidt, H., Stenchikov, G. and Zanchettin, D., 2011: Stratosphere troposphere coupling: the influence of volcanic eruptions. WCRP OSC Climate Research in Service to Society, Denver, USA, 24.-28.10.2011.
- Toohey, M., Krüger, K., Zander, S.,** Niemeier, U. and Timmreck, C., 2011: Southern Annular Mode response to volcanic eruptions: implications for ice core proxies. XVIII INQUA-Congress Quaternary sciences – the view from the mountains : XVIII International Union for Quaternary Research (INQUA)-Congress, Bern, Switzerland, 21.-27.07.2011.
- Toohey, M.,** von Clarmann, T., Hegglin, M. and **Tegtmeier, S.,** 2011: SPARC Data Initiative: climatology uncertainty assessment. WCRP OSC Climate Research in Service to Society, Denver, USA, 24.-28.10.2011.
- Treude, T., Krause, S.,** Hamdan, L., **Schweers, J.,** and Coffin, R., 2011: Decoupled anaerobic oxidation of methane and sulfate reduction within the methanogenic zone of Arctic sediments (Beaufort Sea, Alaska), ISEB conference, Istanbul, Turkey, 27.09.2011.
- Ueberschär, B.,** Mohamed, B. and Schwittek, W., 2011: Mobile applications for the angling community: supporting Biodiversity research in Fish-Base. 6th World Recreational Fishing Conference,

Berlin, 01.-04.08.2011.

Vendrell, M. G., Ranero, C. R., Sallares, V., **Grevenmeyer, I.** and Zitellini, V., 2011: Tectonic Structure of the Tyrrhenian Basin from Multichannel Seismic Images. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Walter, J. M., Houben, A., Schweika, W., **Stipp, M., Ullemeyer, K.**, Klein, H., Leiss, B., Hansen, B. T. and Kuhs, W. F., 2011: POWTEX Diffractometer at FRM II - New Perspectives in Geoscientific Neutron Diffraction. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Walter, J. M., **Stipp, M., Ullemeyer, K.**, Klein, H., Leiss, B., Hansen, B. T. and Kuhs, W. F., 2011: POWTEX Neutron Diffractometer at FRM II - New Perspectives in Rock Deformation and Recrystallisation Analysis. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Wanke, M., Portnyagin, M. V., Werner, R., Hauff, F., Hoernle, K. and Garbe-Schönberg, D., 2011: Effect of seawater alteration on trace element geochemistry of submarine basalts from the Bowers Ridge, Bering Sea. KALMAR - Second Bilateral Workshop on Russian-German Cooperation on Kurile-Kamchatka and Aleutian Marginal Sea-Island Arc Systems, Trier, 16.-20.05.2011.

Wegner, C., Reigstad, M., Forest, A., Forwick, M., Frey, K., Mathis, J., Michel, C., Nikolopoulos, A. and O'Regan, M., 2011: The Arctic in Rapid Transition (ART) Initiative: integrating priorities for Arctic marine science over the next decade. Arctic Marine Geology and Geophysics Research School Seminar, Tromsø, Norway, 15.03.2011.

Wegner, C., Reigstad, M., Forest, A., Forwick, M., Frey, K., Mathis, J., Michel, C., Nikolopoulos, A. and O'Regan, M., 2011: The Arctic in Rapid Transition (ART) Initiative: Integrating priorities for Arctic Marine Science over the next decade. Arctic Frontiers - Arctic Tipping Points, Tromsø, Norway, 23.-28.01.2011.

Wegner, C., Reigstad, M., Forest, A., Forwick, M.,

Frey, K., Mathis, J., Michel, C., Nikolopoulos, A. and O'Regan, M., 2011: The Arctic in Rapid Transition (ART) Initiative: integrating priorities for Arctic marine science over the next decade. Cretaceous-Paleogene Palaeoenvironments, Tectonics and Biostratigraphy of the Arctic and Subarctic - A workshop to Discuss Recent Advances and Future Direction, Tromsø, Norway, 29.-30.03.2011.

Wegner, C., Reigstad, M., Forest, A., Forwick, M., Frey, K., Mathis, J., Michel, C., Nikolopoulos, A. and O'Regan, M., 2011: The Arctic in Rapid Transition (ART) Initiative: integrating priorities for Arctic marine science over the next decade. Engaging Early Career Scientists in Future Scientific Ocean Drilling, College Station, Texas, USA, 30.03.-01.04.2011.

Wegner, C., Reigstad, M., Forest, A., Forwick, M., Frey, K., Mathis, J., Michel, C., Nikolopoulos, A. and O'Regan, M., 2011: The Arctic in Rapid Transition (ART) Initiative: integrating priorities for Arctic marine science over the next decade. 41st Annual Arctic Workshop, Montreal, Québec, Canada, 02.-04.03.2011.

Wegner, C., Reigstad, M., Forest, A., Forwick, M., Frey, K., Mathis, J. T., Michel, C., Nikolopoulos, A. and O'Regan, M., 2011: The Arctic in Rapid Transition (ART) Initiative : integrating priorities for Arctic marine science over the next decade. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Wehrmann, H., Halama, R., Garbe-Schönberg, D., **Hoernle, K., Jacques, G., Heydolph, K., Mahlke, J.** and **Schumann, K.**, 2011: On the fluid-mobility of molybdenum, tungsten, and antimony in subduction systems. Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

Werner, K. and **Spielhagen, R. F.**, 2011: Holocene episodes of warm conditions in the eastern Fram Strait - a multiproxy perspective on the variability of Atlantic Water inflow. EGU General

Assembly 2011, Vienna, Austria, 03.-08.04.2011. Wheeler, W., Tveranger, J., Lauritzen, S. E., **Heincke, B.**, Rossi, G., Allroggen, N. and Buckley, S., 2011: Architecture of a paleokarst breccia-pipe field, Carboniferous, Svalbard. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Wiese, J., Schulz, D., Stöhr, R., Nagel, K., Labes, A., Schneemann, I., Heindl, H., Jansen, N., Silber, J., Kramer, A., Goecke, F. R., Schmaljohann, R., Staufenberger, T., Gärtner, A., Baumann, H. I., Kleinschmidt, K. and **Imhoff, J. F.**, 2011: Biologically active compounds from microorganisms derived from marine macroorganisms and marine sediments. NatPharma: Nature Aided Drug Discovery, NADD, Napoli, Italy, 05.-09.06.2011.

Williams, B., Halfar, J., **Hetzinger, S.**, Lebednik, P. A., Steneck, R. S., Adey, W. H., **Fietzke, J.** and Jacob, D., 2011: 350 years of paleoceanographic change in the Aleutian archipelago extracted from skeletons of a subarctic coralline alga. AGU Fall Meeting 2011, San Francisco, USA, 04.-09.12.2011.

Winkelmann, D. and Geissler, W., 2011: Assessing Arctic Submarine Slope Stability - Investigating the Glide Planes of the Hinlopen/Yermak Megaslide by Scientific Ocean Drilling. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Winkelmann, D., Geissler, W. and Wegener, A., 2011: Assessing Arctic Submarine Slope Stability - Investigating the Glide Planes of the Hinlopen/Yermak Megaslide by Scientific Ocean Drilling. IGCP585 - 5. International Symposium on Submarine Mass Movements and Their Consequences, Kyoto, Japan, 24.-26.10.2011.

Winkelmann, D., Jokat, W., Jensen, L. and Schenke, H. W., 2011: Dynamic Ice on the Continental Shelf of NE-Greenland - The Submarine Morphological Record. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Winkelmann, D., Jokat, W., Jensen, L. and Schenke, H. W., 2011: Dynamics of the Greenland Ice Sheet on NE-Greenland – The Submarine Morphological Record. XVIII INQUA Congress, Bern, Switzerland, 21.-27.07.2011.

Winkelmann, D., Schwab, J., Strasser, M., Preu, B., Schwenck, T. and **Krastel, S.,** 2011: Large-scale submarine mass-wasting offshore Uruguay. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Yuzuru, Y., Lin, W., Usui, Y., Kanamatsu, T., Saito, S., Zhao, X., Hashimoto, Y., **Stipp, M.,** Ujiie, K. and Vannucchi, P., 2011: Preliminary results of stress and strain analyses, IODP Expedition 334, Costa Rica Seismogenesis Project (CRISP). AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Zamora, L., Oeschies, A. and Bange, H., 2011: Oceanic N₂O production and consumption: A comparison between observations and model data. SOPRAN Annual Meeting 2011, Heidelberg, 22.-23.03.2011.

Zantopp, R. J., Fischer, J., Nunes, N. and Kanzow, T., 2011: Toward a synthesis of over-flow transports in the Labrador Sea: The Outflow at 53N. RAPID - USA MOC International Science Meeting, Bristol, UK, 12.-15.07.2011.

Zieringer, M., Stichel, T. and Frank, M., 2011: The hafnium and neodymium isotopic composition of seawater in the tropical Atlantic Ocean. Goldschmidt Conference 2011, Prague, Czech Republic, 14.-19.08.2011.

van den Bogaard, C., Dullo, C., Baranov, B., Hoernle, K., **Nürnberg, D. and Werner, R.,** 2011: Geodynamic and Climate Interaction in the Kurile-Kamchatka and Aleutian Marginal Sea-Island Arc System. AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

van den Bogaard, C., Portnyagin, M., Ponomareva, V., Derkachev, A., Dirksen, O., Diekmann, B., Tiedemann, R. and **Nürnberg, D.,**

2011: Application of Tephrochronology in the Kurile-Kamchatka and Aleutian Marginal Sea-Island Arc Systems (KALMAR-Project). 18. INQUA-Congress, Quaternary Sciences – The View From The Mountains, Bern, Switzerland, 21.-27.07.2011.

von Bechtolsheim, F., Phillip, A., **Canning-Clode, J. and Lenz, M.,** 2011: Native and invasive populations of the slipper limpet *Crepidula fornicata* differ in their tolerance to abiotic stress. 7. International Conference on Marine Bioinvasions, Barcelona, Spain, 23.-25.08.2011.

6.4 Public Lectures

Abegg, F., 2011: Augen und Hände in der Tiefe – Forschungsroboter, Tauchboot und weitere Forschungsgeräte des IFM-GEOMAR. Vortragsreihe Wissen Schaffen am IFM-GEOMAR, Kiel, 08.11.2011

Biastoch, A., 2011: Das Agulhasstromgebiet und seine Bedeutung für das globale Klima. Vortrag im Sonderkolloquium 100 Jahre Prof. Günter Dietrich, IFM-GEOMAR, Kiel, 18.11.2011.

Froese, R., 2011: Sag mir, wo die Fische sind. Tag der offenen Tür, IFM-GEOMAR, Kiel, 28.08.2011.

Froese, R., 2011: Sag mir, wo die Fische sind. IFM-GEOMAR Vorträge zur Kieler Woche, IFM-GEOMAR, Kiel, 20.06.2011.

Form, A., 2011: Kaltwasserkorallen. Bedrohte Juwelen in der Tiefe. Future Ocean Outreach, Kiel, 17.03.2011.

Krause, S., and Treude, T., 2011: Globale Erwärmung und Gashydrate: Was passiert wenn das Methaneis schmilzt? Symposium zur Information der Öffentlichkeit WARNSIGNAL KLIMA: Die Meere - Änderungen & Risiken, Hamburg, 20.09.2011.

Latif, M., 2011: Bringen wir das Klima aus dem Takt?. 7. Himmelpfortener Energiespartage, Himmelpforten, 03.03.2011.

Latif, M., 2011: Climate Change, Renewable

Energy and Societal Challenges. Building Bridges - Solar Energy for Science Symposium, Hamburg, 19.05.2011.

Latif, M., 2011: Corporate Attitude: Herausforderung Klimawandel. BCP Kongress 2011, Hamburg, 06.07.2011.

Latif, M., 2011: Der Weg in die Klimagerechtigkeit. Lange Vorlesungsnacht „Zukunft gestalten“, CAU Kiel, Kiel, 18.11.2011.

Latif, M., 2011: Eine Welt-Klima: 18 Monate nach Kopenhagen. Katholische Hochschulgemeinde Freiburg-Littenweiler (KHG), Freiburg, 06.07.2011.

Latif, M., 2011: Herausforderung Klimawandel. Jahresauftakt-Symposium 2011 „Passion for Sustainability“, Mannheim, 26.01.2011.

Latif, M., 2011: Herausforderung Klimawandel. HDI-Gerling Industrie Versicherung AG, Cap San Diego, Hamburg, 08.09.2011.

Latif, M., 2011: Herausforderung Klimawandel. Vortragsreihe Leser-Akademie, Bremen, 05.12.2011.

Latif, M., 2011: Klimaschutz und Energiewende: Chance und Herausforderung. Stifterverband, Hamburg, 22.09.2011.

Latif, M., 2011: Klimaschutz, eine globale Herausforderung. EMA-Umweltforum „Vernetzung für Zukunftsweisende Kooperationen“, Hamburg, 07.06.2011.

Latif, M., 2011: Nach uns die Sintflut? –Klimawandel-Wetterwandel-Lebenswandel. Ev. Gemeinde Akademie, Blankenese, 03.05.2011.

Latif, M., 2011: Verheizen wir unser Klima?. Phoenix Contact-Kolloquium 2011, Lemgo, 17.11.2011.

Latif, M., 2011: Verändert der Mensch das Klima?. Universitäts-Gesellschaft Schleswig-Holstein, Husum, 13.01.2011.

Latif, M., 2011: Warum der Eisbär einen Kühlschrank braucht ...Hintergründe und Prognosen zum Klimawandel. Eco-Evening an der CAU, Kiel,

08.11.2011.

Latif, M., 2011: The challenge of long-term climate change. METREX Conference „Metropolitan Regions Coping with Climate Change“, Hamburg, 05.-07.10.2011.

Lenz, M., 2011: Bioinvasionen im Meer: Was macht manche Arten so erfolgreich?. Maasholmer Meereskundliche Vorträge, Maasholm, 05.07.2011.

Piatkowski, U., 2011: Kalmare und Kraken: Athleten der Ozeane. Kinder-Uni an der Kiel-Linie, Kiel, 24.06.2011.

Piatkowski, U., 2011: Tintenfische: Athleten im Ozean. Kinder-Uni, Nordakademie Elmshorn, Elmshorn, 20.01.2011.

Riebesell, U., 2011: Versauerung der Meere: Wieviel CO₂ vertragen Flora und Fauna? Symposium zur Information der Öffentlichkeit WARNSIGNAL KLIMA: Die Meere – Änderungen & Risiken, Hamburg, 21.09.2011.

Riebesell, U., 2011: Ozeanversauerung – das andere CO₂-Problem. Lions Club, Steinkirchen, 24.10.2011.

Treude, T., 2011: Mikrobiologische Untersuchungen auf See: Großer Einsatz für kleine Lebewesen. Preisverleihung der Annette Barthelt Stiftung, Kiel, 30.05.2011.

Treude, T., 2011: Kleine Lebewesen mit großer Bedeutung: Wie Mikroben die Chemie im Meeresboden beeinflussen, SFB 574 Summerschool, IFM-GEOMAR, Kiel, 21.07.2011.

Treude, T., 2011: Microbes go high-tech: Wie Bakterien unsere Alltagsprobleme lösen. Night of the Profs, Christian-Albrechts Universität zu Kiel, 18.11.2011.

Ueberschär, B., 2011: Kritische Zeiten für kleine Fische - eine Kindheit im Watt. Kinderuni Wyk auf Föhr, Wyk auf Föhr, 18.08.2011.

Visbeck, M., 2011: Der Ozean der Zukunft: zu hoch, zu warm, zu sauer?. Höxberg-Gespräch, Berufskolleg Beckum, Beckum, 02.02.2011.

Visbeck, M., 2011: Ozean der Zukunft - Das Forschungsnetzwerk der Kieler Meereswissenschaften. Universitäts-Gesellschaft Schleswig-Holstein, Trappenkamp, 17.11.2011.

Visbeck, M., 2011: Ozean der Zukunft - Das Forschungsnetzwerk der Kieler Meereswissenschaft. Universitäts-Gesellschaft Schleswig-Holstein, Glinde, 29.11.2011.

Visbeck, M., 2011: Der Ozean der Zukunft: zu hoch, zu warm, zu sauer?. Lange Nacht der Professoren, Kiel, 17.06.2011.

Völker, D., 2011: Hangrutschungen in den Ozeanen – So what?. Vortrag Waldorfschule Kiel, Kiel, 19.05.2011.

Weinrebe, W., 2011: Tiefenmessungen im Ozean – mit moderner Sonartechnik das Relief der Ozeanböden erforschen. Wissen schaffen, IFM-GEOMAR Kiel, Kiel, 15.03.2011.

6.5 Radio & TV Interviews (selection)

Behrmann, J.: Der Pazifische Feuerring - Ecuador und Chile, ARTE TV, 26.05.2011

Behrmann, J.: Tohoku-Beben in Japan, Deutschlandradio Kultur, 14.03.2011

Behrmann, J.: Tohoku-Beben in Japan, NDR Kultur, 01.03.2011

Behrmann, J.: Tohoku-Beben in Japan, NDR Welle Nord, 13.03.2011

Behrmann, J.: Tohoku-Beben in Japan, Spiegel TV (Pro 7), 19.03.2011

Berndt, C.: Welle von Norden, Deutsche Welle, 20.05.2011.

Biastoch, A.: Zeitbombe im Sediment - Methanhydrate säuern tiefere Wasserschichten, Forschung Aktuell, Deutschlandfunk, 30.06.2011.

Biastoch, A.: Zur globalen Bedeutung des Agulhasstroms, DRadio Wissen, 16.05.2011.

Büdenbender, J.: Ocean acidification effects on North Atlantic pteropods (interview), NDR or ZDF, Bergen, Norway, June 2011.

Dmitrenko, I.: Permafrost in Sibirien, nano, 3sat, 21.12.2011

Form, A.: Auf Tauchfahrt, Quarks & Co., WDR Fernsehen, 22.11.2011.

Form, A.: Im U-Boot zu den Korallenriffen von Norwegen, Wissenschaft, DRS 2 (Schweiz), 05.11.2011.

Kopp, H.: Japan Erdbeben, N3 aktuell, NDR Fernsehen, 11.03.2011.

Kopp, H.: Japan Erdbeben, ntv Fernsehen, 11.03.2011.

Latif, M.: Deutsche Welle Fernsehen (Tagesthema „Durban – Gibt es Aspekte zum Klimawandel und Extremwetter“ im Rahmen der Nachrichtensendungen über den ganzen Tag. Die Sendung wird international ausgestrahlt am Mittwoch, 30.11.11 ab 10 Uhr stündlich alternierend in den

beiden Sprachen.

Latif, M.: Erdbeben, Tsunami, Angst vor dem Atom-GAU - die Jahrhundert-Katastrophe in Japan erschüttert die Welt, zu Gast bei Reinhold Beckmann, ARD, 14.03.2011.

Latif, M.: Extremwetterlagen, mit denen die Norddeutschen künftig häufiger rechnen müssen, Mein Nachmittag, NDR, 12.04.2011.

Latif, M.: Fokus: Trend zur Trockenheit oder ganz normale Klimaschwankungen? Moderation: Marco Schreyll, Telefon-Interview für Morgensendung hr1 start! Am 24.05.11.

Latif, M., 2011: Klimawandel. Vortrag für Besucher vom Meteorologischen Institut der Uni Bonn, IFM-GEOMAR, Kiel, 26.09.2011.

Latif, M.: Interview für Dokumentation zum Klimawandel - Redakteurin Silvana Rosenzweig. Thementag „VOX Planet Blue“, 22.10.2011.

Latif, M.: Interview zum Extremwetter in „planet e“ ZDF, 20.11.2011.

Latif, M.: Interview zum Thema: Neue Energie. Die große Reportage, RTL-TV, 12.06.11.

Latif, M.: Interview zum Tornado in Joplin, USA. Explosiv - Das Magazin, RTL-TV, 23.05.2011.

Latif, M.: Interview. Ö1-Mittagsjournal-Sendereihe „Im Journal zu Gast“. Ö1 Rundfunk, 03.12.2011.

Latif, M.: Klimaveränderungen, ARD-Morgenmagazin, ARD, 17.01.2011.

Latif, M.: Klimawandel, DAS! NDR, 17.03.2011 (18:45-19:30).

Latif, M.: REDEZEIT „Ist das Klima noch zu retten? Was muss der Gipfel in Durban leisten?“ zugeschalteter Gast: Jochen Flasbarth, Präsident des Umweltbundesamtes, Moderator: Matthias Franck. NDR Info, 29.11.2011.

Latif, M.: Über den Extremwetterkongress in Hamburg. NDR aktuell (TV) und RTL Guten Abend, 12.04.11.

Latif, M.: Weltweite Wassernot – Sitzen wir bald

auf dem Trockenen? Studiogast gemeinsam mit Wasserexpertin und Umweltschützerin Ann-Kathrin Schneider. Planet Wissen, WDR, 29.06.11.

Latif, M.: Wetterkapriolen. Weck Up, SAT1, 06.02.2011.

Latif, M.: Wie verseucht ist das Meer, Aktuelle Stunde, WDR, 26.03.2011.

Latif, M.: Zyklon vor Australien, seine Berechenbarkeit und gibt es Zusammenhänge mit den Überschwemmungen, h1 Start, hr Radio, 02.02.2011.

Riebesell, U.: Zur Verleihung des Leibniz Preises. Hörfunkinterview NDR1, 08.12.11.

Tatsache, dass er den Leibniz-Preis

Spielhagen, R.: Fußballspiel am Nordpol vor 20 Jahren, Von Binnenland und Waterkant, NDR1, 07.09.2011.

Spielhagen, R.: Ozeanerwärmung in der Arktis, Aus Forschung und Technik, Deutschlandfunk, 31.01.2011.

Spielhagen, R.: Ozeanerwärmung in der Arktis, nano, 3sat, 31.01.2011.

Spielhagen, R.: Ozeanerwärmung in der Arktis, Von Binnenland und Waterkant, NDR1, 28.01.2011.

Visbeck, M.: Faszination Wissen, BR, 06.03.2011.

Visbeck, M.: Jahrestag des Deep Water Horizon Unglücks. Rundfunk Schweiz, 15.04.2011.

7. Scientific Exchange & Cooperation

7.1 Visitors at IFM-GEOMAR

Akumbom, V.: University Buea, Buea, Kamerun, 08.02.-04.05.2011.

Alexandrova, A.: St. Petersburg State University, St. Petersburg, Russia, 16.-26.06.2011.

Anlauf, H.: SOTON, Southampton, UK, 01.-31.12.2011.

Antonova, S.: St. Petersburg State University, St. Petersburg, Russia, 24.01.-10.02.2011.

Bi, R.: Ocean University of China, Qingdao, 29.09.2009-30.09.2013.

Bodeker, G.: Bodeker Scientific, Alexandra, New Zealand, 10.-17.04.2011, 26.04.-10.05.2011.

Bubenshchikova, N.: P.P. Shirshov Institute of Oceanology of the Russian Academy of Sciences, Moscow, Russia, 06.03.-03.04.2011.

Carrasco Montes, C.: Laboratorio de Procesos Oceanograficos y Clima, Universidad de Concepción, Concepción, Chile, 01.06.-31.07.2011.

Change, M. Y.: University of Bergen, Norway, 01.03.-31.05.2011.

Chuang, V.: RISE-Student: Rice University, Lovett College, Houston, Texas, USA, 27.06.-19.08.2011.

Collins, C.: University of Capetown, Capetown, South Africa, 21.08.-09.09.2011.

Collins, S.: Society University Research Fellow Institute of Evolutionary Biology University of Edinburgh, UK, 02.-08.05.2011, 10.-19.08.2011 and 17.-28.10.2011.

Contreras Reyes, E.: Universidad Católica de Santiago de Chile, Santiago de Chile, Chile, 01.05.-15.06.2011.

Costelloe, A.: Department of Chemical Engineering, University of the West Indies, St. Augustine, Trinidad and Tobago, 17.11.-

10.12.2011.

Demchenko, N.: P.P. Shirshov Institute of Oceanology, Atlantic Branch, Kaliningrad, Russia, 10.-23.10.2011.

Demir, N.: University of Kocaeli, Turkey, 21.03.-08.04.2011.

Derkachev, A.: Pacific Oceanological Institute, Vladivostok, Russia, 19.11.-03.12.2011.

Dorador, C.: Laboratorio de Ecología Microbiana, Centro de Bioinnovación-Antofagasta, Universidad de Antofagasta, Chile 23.05.-29.05.2011.

Filippova, A.: St. Petersburg State University, St. Petersburg, Russia, 01.-15.02.2011.

Fuqing, J.: Key Laboratory of Marine Geology & Environment, Institute of Oceanology, Chinese Academy of Sciences, Qingdao, China, 02.05.-31.12.2011.

Gallais, F.: Université de Bretagne Occidentale, Brest, France, 17.-28.01.2011.

Gao, Prof. K.S.: DAAD-Stipendiat: Xiamen University, Xiamen, Fujian/China, 15.08.-30.09.2011.

Gary, S.: Duke University, Durham, USA, 25.11.-19.12.2011.

Geffen, A.: University of Bergen, Norway 01.04.-31.05.2011.

Goecke, F.: Universität Concepción, Chile. Deutscher Akademischer Austausch Dienst (DAAD) – Becas Chile (Conicyt) PhD Program Stipendium 06.2008-2012.

Guinder, V.: Instituto Argentino de Oceanografía, Universidad Nacional del Sur, Bahía Blanca, Argentina. 01.08.11-30.09.11

Haley, B.: Oregon State University, Corvallis, OR, USA, 09.-20.05.2011.

Hämmerli, A.: ETH Zürich, Switzerland, 15.05.-30.09.2011.

Hannington, M.: University of Ottawa, Ottawa, Canada, 06.-20.08. and 26.11.-08.12.2011.

Infante, Claudia, D.: Laboratorio de Ecología Microbiana, Centro de Bioinnovación-Antofagasta, Universidad de Antofagasta, Chile, 17.01.-12.02.2011.

Ivanoshchuk, I.: St. Petersburg State University, St. Petersburg, Russia, 14.-24.02.2011.

Kaparulina, E.: St. Petersburg State University, St. Petersburg, Russia, 21.-28.02.2011.

Keeling, R.: Scripps Institution of Oceanography, UCSD, San Diego, USA, 08.-31.08.2011.

Khleborodova, O.: Institute of Volcanology and Seismology FEB RAS, Petropavlovsk-Kamchatsky, Russia, 29.09.-11.10.2011.

Kirillov, S.: Arctic and Antarctic Research Institute, St. Petersburg, Russia, 01.-15.01.2011, 01.07.-31.08.2011.

Kogovsek, T.: Marine Biology Station Piran, National Institute of Biology, Slovenia, 01.12.2011 – 28.02.2012.

Llanillo, P. del Rio: Instituto de Ciencias del Mar CMIMA-CSIC, Barcelona, Spain, 16.09.-15.12.2011.

Loginova, A.: St. Petersburg State University, St. Petersburg, Russia, 14.-24.02.2011.

Lopez Abbate, C.: Universidad Nacional del Sur, Argentina, Argentinian Institute of Oceanography (IADO), 26.08.-27.11.2011.

Loveday, B.: University of Capetown, Capetown, South Africa, 28.11.-16.12.2011.

Martynov, F.: Arctic and Antarctic Research Institute, St. Petersburg, Russia, 30.06.-29.07.2011.

Meng, Q.: University of Qingdao, China, 09.11.2010-14.02.2011.

Moison, M.: Laboratory d'Oceanology and

Geosciences, UMR LOG 8187, Université de Lille 1, France, 01.02.11-31.12.11.

Mussoni, P.: Università degli studi di Parma, Parma, Italy, 24.-31.01.2011.

Nash, R.: Institute for marine Research, Bergen, Norway. 01.04.-31.05.2011.

Novikhin, A.: Arctic and Antarctic Research Institute, St. Petersburg, Russia, 11.10.-07.11.2011.

Ogawa, F.: University of Tokyo, Japan, 08.-23.02.2011, 12.07.-17.08.2011.

Ovsepyan, E.: P.P. Shirshov Institute of Oceanology of the Russian Academy of Sciences, Moscow, Russia, 01.-30.09.2011.

Ovsepyan, Ya.: P.P. Shirshov Institute of Oceanology of the Russian Academy of Sciences, Moscow, Russia, 01.-30.09.2011.

Paczkowska, J.: DBU Stipendiatin, Poland, 01.03.2010-31.01.2011.

Panno, L.: Plant Biology Department, University of Turin, Italia, 08.02.-01.05.2011.

Peter, Kalista, H., Dodoma University, Department of Geography and Environmental studies, Dodoma, Tanzania. 29.09.2010-30.09.2013.

Pham Thi M.: Institute of Oceanography, Nha Trang, Vietnam. Deutscher Akademischer Austausch Dienst (DAAD/MOET). Stipendium. 01.10.2010-30.09.2014.

Plaza, A.: Institute of Geological and Nuclear Sciences, GNS, Lower Hutt, New Zealand, 07.11.-13.12.2011.

Polyakova, Y.: Moscow State University, Moscow, Russia, 10.01.-23.02.2011, 14.10.-12.11.2011.

Ponomareva, V.: Institute of Volcanology and Seismology FEB RAS, Petropavlovsk-Kamchatsky, Russia, 16.05.-10.06.2011, 17.10.-14.11.2011.

Roldan-Heredia, Alejandro, Institute of Marine Sciences and Fisheries, University of Veracruz, Mexico, 01.-20.12.2011.

Sarkar, S.: University of Southampton, Southampton, UK, 19.09.-21.11.2011.

Semeryuk, I.: St. Petersburg State University, St. Petersburg, Russia, 04.-24.02.2011.

Send, U.: Scripps Institution of Oceanography, UCSD, La Jolla, USA, 16.-31.08.2011.

Shiganova, T.: University of Moscow, Russia, 17.05.-10.06.2011.

Sidorov, I.: St. Petersburg State University, St. Petersburg, Russia, 01.-08.08.2011.

Taldenkova, E.: Moscow State University, Moscow, Russia, 11.08.-20.09.2011, 30.11.-24.12.2011.

Timofeeva, A.: Arctic and Antarctic Research Institute, St. Petersburg, Russia, 01.-14.05.2011.

Timokhov, L.: Arctic and Antarctic Research Institute, St. Petersburg, Russia, 08.01.-05.02.2011.

Tsukanov, N.: P.P. Shirshov Institute of Oceanology RAS, Moscow, Russia, 05.-17.12.2011.

Ummenhofer, C.: Climate Change Research Centre, University of New South Wales, Sydney, Australia, 10.05.-17.06.2011.

Vinogradova, E.: P.P. Shirshov Institute of Oceanology of the Russian Academy of Sciences, Moscow, Russia, 01.-31.07.2011.

Weiss, R.: University of South Carolina, Columbia, SC, USA, 17.05.-01.06.2011.

Wolf, Sun M.: Sanyuan, Shaanxi Province, China, Chinese Scholarship. 01.10.2011-30.09.2014.

Xu, Dr. J.: DAAD-Stipendiat: Xiamen University, Xiamen, Fujian/China, 15.08.-30.09.2011.

Zhang, L.: Faculty of Engineering, China University of Geosciences, Wuhan, China, 01.-31.12.2011.

Zhang, Y.: Chinese Scholarship Council-Stipendiat: College of Life Sciences, Huazhong Normal University, China, 01.09.-31.12.2011.

Zhuravleva, A.: St. Petersburg State University,

St. Petersburg, Russia, 21.-28.02.2011.

7.2 Visits by IFM-GEOMAR staff

Berndt, C.: Geology and Geophysics Group, National Oceanography Centre, Southampton, UK, 15.-30.04.2011.

Böning, C.W.: Climate Change Research Centre, University of New South Wales, Sydney, and CSIRO Centre for Marine and Atmospheric Research, Hobart, TAS, Australia, 01.11.2011-31.01.2012.

Crutchley, G.: Institute of Petroleum Engineering, Heriot-Watt University, Edinburgh, UK, 17.-21.10.2011.

Devey, C.: Woods Hole Oceanographic Institution, Boston, USA, 01.01.-22.10.2011.

Froese, R.: FishBase Information and Research Group, Los Baños, Laguna, Philippines, 02.-20.12.2011.

Haynert, K.: Geoscience Research Group, Department of Chemical Engineering, University of the West Indies, St. Augustine, Trinidad and Tobago, 14.02.-08.03.2011.

Kürten, B.: King Abdulaziz University, Jeddah, Saudi Arabia, 06.09.-28.11.2011.

Lenz, M.: 7th Sino-German Summer School, Qingdao, China, 03.-11.09.11.

Melzner, F.: National Taiwan University und Academia Sinica, ROC, 15.01.-23.01. 2011.

Pansch, C.: ASSEMBLE travel grant for the Sven Lovén Centre for Marine Sciences (Göteborg University), Tjärnö, Strömstad, Sweden, Aug.-Sept 2011.

Sawall, Y.: King Abdulassiz University, Jeddah, Saudi Arabia, 27.01.-28.02.2011 and 10.09.-19.10.2011; King Abdulla University of Science and Technology (KAUST), Tuwal, Saudi Arabia, 19.-27.10.2011.

Scholz, F.: Rutgers University, and Oregon State University, USA, 19.09.-21.10.2011.

Appendices

Teschner, C.: University of the West Indies at St. Augustine, St. Augustine, Trinidad and Tobago, 14.02.-08.03.2011.

Wahl, M.: King Abdulassiz University, Jeddah, Saudi Arabia, 27.01.-28.02.2011.

Weinberger, F.: Centre of Marine Sciences, University of Algarve, Faro/Portugal, 07.-29.04.2011.

7.3 Conferences & Meetings (organized by IFM-GEOMAR staff)

Anka, Z, Gay, A., and **Berndt, C.:** Fluid flow in marine sediments. Session at EGU, Vienna, 05.-07.04.2011.

Bange, H. W.: 4th SOPRAN Annual Meeting, Heidelberg, Germany, 22.-23.03.2011.

Bauch, H.A. (session convenor): Past Interglacials. INQUA 2011, Bern, Switzerland, 21.-27.07.2011.

Behrmann, J.: Stress and Texture Investigations by Means of Neutron Diffraction, Frank Laboratory of Neutron Physics, (Organisatoren: Stephansson, O., Balagurov, A.M., Belushkin, A.V., Behrmann, J.H., Matthies, S., Mikula, P., Nikitin, A.N., Schilling, F.R. & Walther, K.), Dubna, Russia, 06.-09.06.2011.

Berndt, C.: Deutsch-taiwanesischer Gashydrat Workshop, Kiel, 11.-14.07.2011.

Bertics, V., and Treude, T.: ISEB session "Benthic Nitrogen Cycling", Istanbul, Turkey, 27.09.2011.

Bialas, J.: Workshop „Gas hydrate research and CO₂ sequestration“ in Zusammenarbeit mit CEPAC, Porto Alegre, Brazil, 10.-13.05.2011.

Böning, C.W., Cazenave, A. and Latif, M. (Conveners): WCRP Open Science Conference, Parallel Session B3: Ocean Dynamics and Sea Level: Variability and Change, Denver, USA, 24.10.2011.

Bröckel, K. von: European Research Vessel

Operators, ERVO, Annual Meeting, Oristano, Italy, 10.-11.05.2011.

Bröckel, K. von: International Research Ship Operators, IRSO, Annual Meeting, Seattle, USA, 24.-27.05.2011.

Dengg, J. and Parchmann, I.: Möglichkeiten, Herausforderungen und Grenzen der Projektevaluation, Workshop bei Fachtagung „Keine Angst vor Wissenschaft!“, Kiel, 27.05.2011.

Dengg, J.: Projektevaluation, Workshop bei Körberstiftung, Hamburg, 02.05.2011.

Dengg, J.: Schulprojekte im Norden, Bremerhaven, 24.-25.03.2011.

Dengg, J.: Treffen der NaT-Working Botschafter der Robert-Bosch Stiftung, Kiel, 08.-09.11.2011.

Dullo, W.-Chr. and van den Bogaard, C.: 2nd Bilateral Workshop of KALMAR-Phase I: Kurile-Kamchatka and the Aleutian Marginal Sea-Island Arc Systems, Trier, 16.-20.05.2011.

Eizaguirre, C.: Co-organizer of the Symposium „ Evolutionary Ecological Genomics“ Society of Evolutionary Biology (ESEB), Tübingen, xx-yy.08.2011.

Gersonde, R., Tiedemann, R. and **Nürnberg, D.** (Convenor): Pleistocene-Holocene climate variability in the North Pacific realm, PP24 - AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Haynert, K.: FOBIMO (FOraminiferal Bio-Monitoring) Workshop, Fribourg, Switzerland, 21.-25.06.2011.

Imhoff, J.F., Labes, A.: BIOTECHNICA, Hannover, 11.-13.10.2011.

Karstensen, J.: EGO 2011 Workshop and Glider School, Las Palmas de Gran Canaria, Spain, 14.-18.03.2011.

Kassens, H., Hölemann, J. and Volkmann-Lark, K.: Otto Schmidt Laboratory Fellowship Meeting, St. Petersburg, Russia, 19.12.2011.

Kassens, H., Kakhro, N., Klagge, T. and

Volkmann-Lark, K.: Lebende Ausstellung – Brennpunkte der deutsch-russischen Zusammenarbeit auf dem Gebiet der Meeres- und Polarforschung, St. Petersburg, Russia, 14.-28.10.2011.

Kassens, H., Klagge, T. and Volkmann-Lark, K.: Nationales Arbeitstreffen des Verbundvorhabens „System Laptev-See: Eurasische Schelfmeere im Umbruch – Ozeanische Fronten und Polynjasysteme in der Laptev-See“, Kiel, 12.12.2011.

Kassens, H., Klagge, T. and Volkmann-Lark, K.: Russian-German Working on Arctic Ocean Transpolar System: History and Future, St. Petersburg, Russia, 05.07.2011.

Labes, A., & Schulz, D.: Summerschool „Marine Biotechnologie“ mit FHNWS, Kiel, 28.06.-03.07.2011.

Labes, A.: BIODIVERSITY2021 Summer School „Methoden in der Biotechnologie: Etappen der Produkt- und Prozessentwicklung“, Kiel, 11.-14.07.2011.

Labes, A.: Kick-off-Meeting MARINE FUNGI: Wissenschaftszentrum Kiel, 24.-25.05.2011.

Lehmann, A.: 8th Baltic Sea Science Congress, Session: Coastal-offshore exchange processes, St. Petersburg, Russia, 22.-26.08.2011.

Lehmann, A.: ICES Annual Science Conference, Theme Session E: Upwelling events, coastal-offshore exchange and links to biogeochemical processes in various parts of the ocean, Gdansk, Poland, 19.-23.09.2011.

Lenz, M., Wahl, M.: Baltic Sea Hard-bottom Monitoring Meeting, UBA workshop, 16.06.2011.

Lenz, M.: Taxonomischer Workshop“ Bestimmung aktuell in der Nord- und Ostsee auftretender Neobiota“ IFM-GEOMAR, Kiel, 15.06.2011.

Lenz, M.: International Workshop on the Monitoring of Hard-Bottom Communities in Baltic Sea Coastal Waters. IFM-GEOMAR, Kiel, 16.06.2011.

Melzner, F.: Session 'Evolutionary rules in the brave new ocean – Climate change and life-history strategies', organized together with S. Dupont and M. Thorndyke, ASLO Meeting San Juan, Puerto Rico, USA, 14.-19.02.2011.

Nürnberg, D. (Convenor), Schmidt, M. and Flower, B.: Gulf of Mexico/Caribbean Sea Paleoenvironment and Ocean/Continent/Atmosphere Linkages, PP13 - AGU Fall Meeting 2011, San Francisco, USA, 05.-09.12.2011.

Oschlies, A.: SFB 754 General Assembly of Members, Kiel, 21.12.2011.

Patara, L.: 2nd Young Scientist Excellence Cluster meeting, Bremen, 04.-05.10.2011.

Quack, B.: SHIVA Steering Committee Meeting, Kiel, 06.-07.01.2011.

Quack, B.: SHIVA-SONNE Cruise Meeting, Kiel, 02.05.2011.

Reusch, T., Roth, O.: 3rd VW Status Symposium in Evolutionary Biology "Evolution at the Sea", Sylt, 07.-11.11.2011.

Riebesell, U.: 2nd BIOACID Annual Meeting, Bremen, Germany, 26.-30.09.2011.

Riebesell, U.: EPOCA Svalbard 2010, 2nd Data Workshop, Kiel, 15.-16.09.2011.

Rosmorduc, V. and **Dengg, J.:** Ocean Science Outreach and Education, EGU General Assembly, Vienna, Austria, 06.04.2011.

Schelten, C.: SFB 754 PhD Workshop, Friedrichstadt, Germany, 31.07.-01.08.2011.

Schönfeld, J.: Foraminiferal Bio-Monitoring (FOBIMO), Fribourg, Switzerland, 22.-24.06.2011.

Sommer, U., Javidpour, J., Garzke, J.: Ph.D. course in „Mesocosms in aquatic ecology: use, problems and potentials“, Kiel, 29.08.-02.09.2011. Stadnitskaia, A., Niemann, H., Feseker, T., **Haeckel, M.**, and Schicks, J. M.: Methane and gas hydrates in marine and terrestrial environments: sources, sinks and ecosystems. EGU General Assembly 2011, Vienna, Austria, 03.-08.04.2011.

Stramma, L.: Ocean deoxygenation and implications for marine biogeochemical cycles and ecosystems, Le Mas de Canelles, Toulouse, France, 24.-26.10.2011.

Tanhua, T.: M84/3 – Repeat Hydrography in the Mediterranean Sea, Hamburg, 11.-13.10.2011.

Tanhua, T.: REgional Carbon Cycle Assessment and Processes (RECCAP), Shepherdstown, West Virginia, USA, 23.-27.05.2011.

Tanner, B., **Kassens, H., Kakhro, N., Klagge, T.,** Priamikov, S. and **Volkman-Lark, K.:** 16. Arbeitstreffen im Rahmen der Fachvereinbarung über die Zusammenarbeit auf dem Gebiet der Meeres- und Polarforschung zwischen dem Ministerium für Bildung und Wissenschaft der Russischen Föderation und dem Bundesministerium für Bildung und Forschung der Bundesrepublik Deutschland, St. Petersburg, Russia, 27.-28.10.2011.

Tegtmeier, S. and Hegglin, M.: 2nd SPARC data initiative workshop, Bern, Switzerland, 06.-10.06.2011.

Tegtmeier, S. and Hegglin, M.: 3rd SPARC data initiative workshop – review meeting, Toronto, Canada, 14.-16.12.2011.

Visbeck, M.: DPG – Physics Summer School "Physics of the Ocean", Physikzentrum Bad Honnef, 11.-16.09.2011.

Wallace, D. W. R.: SFB 754 Retreat 2011 / International Workshop, Lübeck, 21.-23.02.2011.

Wallace, D. W. R.: SOLAS Steering Committee Meeting, Kiel, 24.-26.05.2011.

Wegner, C. and Choi, S.: ART Executive Committee Meeting, Seoul, South Korea, 28.03.2011.

Wegner, C. and Mikkelsen, N.: ART Executive Committee Meeting – POLARSTERN Proposal, Copenhagen, Denmark, 21.-22.11.2011.

Wiese, J.: EU Proposal Marine Drugs Pipeline, IFM-GEOMAR, Kiel, 14.-15.09.2011.

Wiese, J.: SUBMARINER, IFM-GEOMAR, Kiel,

02.-04.11.2011.

7.4 Colloquia & Seminars at IFM-GEOMAR

Meereswissenschaftliches Kolloquium

06.01.2011:

Fueglistaler, Prof. Dr. S., Princeton University, Princeton, USA: „Troposphere-to-Stratosphere Transport in the Tropics“

14.01.2011 Gedenkkolloquium für Prof. Sebastian Gerlach:

Graf, Prof. Dr. G., Universität Rostock: „Wechselwirkung Tiere - Sediment“

31.01.2011:

Camoin, Dr. G., Europôle Méditerranéen de l'Arbois, Aix-en-Provence, France: „Sea level change and reef development during the last deglaciation in Tahiti (French Polynesia)“

11.02.2011:

Fussmann, G., Montreal, Canada: „The multifaceted nature of plankton dynamics: from cell cycles to meta-communities“

18.02.2011:

Civitaresse, Dr. G., Istituto Nazionale di Oceanografia e di Geofisica Sperimentale, Trieste, Italy: „The Bimodal Oscillating System of the Eastern Mediterranean“

27.05.2011:

Wilson, Prof. Dr. B., University of the West Indies, Trinidad: „A Tale of Me and SHE Analysis“

27.05.2011 Annette Barthelt-Preisverleihung 2011:

Treude, Prof. Dr. T., IFM-GEOMAR: „Mikrobiologische Untersuchungen auf See: Großer Einsatz für kleine Lebewesen“

10.06.2011 Farewell Mini-Symposium for Prof. Douglas Wallace

08.07.2011 Sonderkolloquium - Fritz Schott Ocean Circulation Lecture:

Lumpkin Dr. C.F., NOAA, Physical Oceanography Division, Miami, USA „*Seasonal to multidecadal changes in the surface circulation of the Tropical and South Atlantic Oceans*”

04.11.2011 Joint SFB754 and „Meereswissenschaftliches Kolloquium”:

Graco, Dr. M., Chemical Oceanography, Instituto del Mar de Perú, Peru: „*The OMZ and nutrients features as a signature of the low frequency variability off Peru*”

18.11.2011 Sonderkolloquium „100 Jahre Prof. Günter Dietrich”:

Siedler, Prof. Dr. G., IFM-GEOMAR: „*Günter Dietrich – ein Gestalter der deutschen Meeresforschung*”

Biastoch, PD Dr. A., IFM-GEOMAR: „*Das Agulhasstromgebiet und seine Bedeutung für das globale Klima*”

Schauer, Prof. Dr. U., AWI, Bremerhaven: „*Die Rolle des Arktischen Mittelmeeres für den Nordatlantik*”

24.11.2011:

Dippner, PD Dr. J., Leibniz-Institut für Ostseeforschung, Warnemünde: „*Quo vadis, Ostsee?*”

01.12.2011:

Vetriani, C., Institute of Marine and Coastal Sciences - Department of Biochemistry and Microbiology, Rutgers University, New Brunswick, USA: „*Chemosynthetic microbial biofilms: Understanding the foundation of deep-sea hydrothermal vent ecosystems*”

SFB574 Seminars

17.03.2011:

Koulakov, Dr. I., Institute of Petroleum Geology and Geophysics, Novosibirsk, Russia: „*Subduction zone imaging using active and passive seismic tomography*”

21.04.2011:

Mutter, Dr. A., CAU-IfG: „*Fluids in Subduction Zones*”

05.05.2011:

Dannowski A., Arroyo, Dr. I., IFM-GEOMAR: „*3-D structure and seismotectonics prior to the 2010 Chile Earthquake (Mw=8.8) in the Maule region*”

12.05.2011:

Contreras-Reyes, Dr. E., Universidad de Chile, Santiago de Chile, Chile: „*Control of high oceanic features and subduction channel on earthquake ruptures along the Chile-Peru subduction zone*”

26.05.2011:

Worzewski, T., IFM-GEOMAR: „*Marine Magnetotellurics on a Continental Margin: Imaging the Hydration and Dehydration Cycle in the Costa Rican Subduction Zone*”

23.06.2011:

Steeb, P., IFM-GEOMAR: „*Challenging the microbial methane filter Preliminary results from flow-through experiments and cold seeps studies of Costa Rica*”

11.08.2011:

Timm, C., GNS Science, Geochemistry Geophysics Geosystems, New Zealand: „*Louisville Seamount Subduction in the Tonga Trench*”

25.08.2011:

Barker, Dr. A., University of Uppsala, Uppsala, Sweden: „*The olivine telescope: Zooming in on mantle lithologies in Cape Verde*”

22.09.2011:

Dürkefälden, A., IFM-GEOMAR: „*Multi-stage evolution of primitive alkaline rocks*

from submarine volcanic cones on the north and southwest flanks of Fogo, Cape Verde Archipelago”

22.09.2011:

Hansen, J., IFM-GEOMAR: „*Investigation of pre-eruptive magma evolution at melt inclusions of the phonolitic seamount Cadamosto, Cape Verde Islands*”

26.09.2011:

Coffin, Prof. M. F., National Oceanography Centre, Southampton, UK: „*Crustal Structure of the Ontong Java Plateau Deduced from an Active Source Seismic Experiment*”

29.09.2011:

Gill, Prof. J.B., University of California Santa Cruz, Earth & Planetary Sciences, Petrology and Geochemistry, Santa Cruz, USA: „*Creating Earth's oceanic and continental crust*”

05.10.2011:

Pearce, Prof. J.A., University of Cardiff, Mineralogy and Petrology, Cardiff, UK: „*The First Ocean Ridge Mantle Xenoliths: what they tell us about Mantle Melting*”

10.11.2011:

Halama, Dr. R., CAU-IfG: Metamorphosed oceanic lithosphere exhumed: „*Ultramafic rocks of the Raspas Complex, Ecuador*”

21.11.2011:

Davy, Dr. B., GNS Science, Marine Geophysics, New Zealand: „*Hikurangi Plateau subduction leading to Gondwana breakup*”

22.11.2011:

Burkert, C., IFM-GEOMAR: „*The magmatic components of the Diamante Tuff (Diamante caldera/Maipo volcano, Southern Volcanic Zone of Chile)*”

SFB754 Seminars

21.02.2011 SFB Retreat:

Gutierrez, Dr. D., IMARPE, Peru: *"Current status of the paleo-oceanographic research on the late Quaternary in the Peruvian margin by the IMARPE and PALEOPECES team"*

Kienast, Prof. Dr. M., Dalhousie Univ., Halifax, Canada: *"Millennial-scale variations in hydrography and biogeochemistry in the Eastern Equatorial Pacific over the last 100 kyr"*

Ledwell, Dr. J., WHOI, Woods Hole, USA: *"A Tracer Study of Mixing in the Antarctic Circumpolar Current"*

Testor, Dr. P., LODYC, Paris, France: *"Fine scale vertical structure of a tropical upwelling system as observed from glider data off Pisco (14° S, Peru)"*

Schneider, Dr. N., Univ. Hawaii, Honolulu, USA: *"Pathways between the Equatorial Zone and the Subtropics"*

22.02.2011 SFB Retreat:

Garcon, Dr. V., LEGOS, Toulouse, France: *"EBUS: a natural SOLAS playground"*

Reynolds, Dr. B., ETH Zürich, Zürich, Switzerland: *"Using Si isotopes to trace the biogeochemical cycling of Si"*

Boyle, Dr. E., EAPS, USA: *"Iron in the tropical North Atlantic OMZ: evidence of dust-enriched Fe:C in sinking particulate matter"*

02.05.2011:

Ryabenko, Dr. E., IFM-GEOMAR: *"Nitrogen isotopes in the Atlantic and Pacific OMZs"*

27.06.2011:

Mecking, Dr. S., Univ. Washington, Seattle, USA: *"Decadal variability and trends from North Pacific Repeat Hydrography: Changes in oxygen, pH, and tracer ages"*

04.07.2011:

Kahru, Dr. M., Scripps Institution of Oceanography, La Jolla, USA: *"Satellite Ocean Color Applications: from Global to Arctic to the Baltic"*

13.07.2011:

Sijp, Dr. W., University of New South Wales, Sydney, Australia: *"Calculating the AMOC OFF state saddle node and transient behaviour"*

10.10.2011:

Deutsch, Prof. Dr. C., UCLA, Dept. of Atmospheric & Oceanic Sciences, Los Angeles, USA: *"A climatic pulse in the heart of the oxygen minimum zone"*

12.10.2011:

Schmidtke, Dr. S., University of East Anglia, Norwich, UK: *"The Pacific oxygen minimum zone and its ventilation pathways"*

31.10.2011:

Altabet, Prof. Dr. M., School of Marine Sciences, University of Massachusetts: *"Re-evaluating interactions and feedbacks between global ocean nitrogen sources and sinks"*

04.11.2011:

Graco, Dr. M., Chemical Oceanography, IMARPE, Peru: *"The OMZ and nutrients features as a signature of the low frequency variability off Peru"*

28.11.2011:

Seibel, Prof. Dr. B., University of Rhode Island: *"Existing oxygen levels are the threshold for marine life in oxygen minimum zones"*

FB1 Seminar

17.01.2011:

Smyth, Prof. Dr. B., College of Oceanic & Atmospheric Sciences, Oregon State University, Corvallis, OR, USA: *"Kelvin-Helmholtz instability in the upper equatorial Pacific: Why is the frequency near N?"*

31.01.2011:

Maraun, Prof. Dr. D., IFM-GEOMAR, Kiel: *"Extreme Value Theory - The Block Maxima Approach in a Nutshell"*

14.02.2011:

Ogawa, F., University of Tokyo, Tokyo, Japan: *"On the active impact of midlatitude oceanic front to the atmospheric general circulation"*

16.03.2011:

Birner, Assoc. Prof. Dr. T., Department of Atmospheric Science, Colorado State University, Fort Collins, USA: *"Widening of the tropical belt and poleward contraction of the jets: diagnostics and mechanisms"*

Joint FB2/FB1 seminar:

11.04.2011:

Kreher, Dr. I., NIWA, Lauder, New Zealand: *"The hunt for halogen oxides (IO and BrO) in the marine boundary layer: From the Tropics to the Antarctic"*

27.04.2011:

Pisso, Dr. I., JAMSTEC, Japan: *"Constraints on CO₂ flux emissions: reconstructions of in-situ measurements from Lagrangian stochastic inversion"*

09.05.2011:

Bodeker, Dr. G., Bodeker Scientific, Alexandra, New Zealand: *"Everything you ever wanted to know about ozone"*

23.05.2011:

Zanchettin, Dr. D., MPI, Hamburg: *"Can strong tropical volcanic eruptions induce decadal changes in the coupled ocean-atmosphere system?"*

15.06.2011:

Ottera, Dr. O.H., Bjerknes Centre for Climate Research, Bergen Norway: *"The role of natural external forcings for Atlantic multidecadal variability"*

Joint FB1/FB2/SFB754 seminar:

13.07.2011:

Sijp, Dr. W., Climate Change Research Centre, University of New South Wales, Sydney, Australia: *"Calculating the AMOC OFF state saddle node and transient behaviour"*

20.07.2011:

Gan, Assoc. Prof. Dr. J.-P., Division of Environment & Department of Mathematics, University of Science and Technology, Hong Kong, China: *"Intensified coastal upwelling, river plume and associated biogeochemical response in the northeastern South China Sea"*.

22.08.2011:

Stenchikov, Dr. G., King Abdullah University of Science and Technology (KAUST), Kingdom of Saudi Arabia: *"Ocean Responses to Volcanic Radiative Forcing"*.

24.08.2011:

Schneider, Dr. N., International Pacific Research Center and Department of Oceanography, University of Hawaii, USA: *"The response of the atmospheric Ekman layer and Ekman pumping to sea surface temperature fronts"*.

29.08.2011:

Thurnherr, Dr. A., LDEO, Columbia University, Palisades NY, USA: *"Vertical velocity from LADCP data"*.

10.10.2011:

Badin, Dr. G., Program in Atmospheric and Oceanic Sciences, Princeton University, USA: *"Submesoscale dynamics, coherent turbulence and lateral mixing in the ocean"*.

12.10.2011:

Schmidtke, Dr. S., University of East Anglia, Norwich, England: *"The Pacific oxygen minimum zone and its ventilation pathways"*.

09.11.2011:

Fletcher, Dr. C., University of Waterloo, Waterloo, ON, Canada: *"Understanding the zonal response to teleconnections"*.

14.11.2011:

Szuts, Dr. Z., Zentrum für Marine und Atmosphärische Wissenschaften, Hamburg: *"Energy and energy fluxes of low-frequency waves along 26N in the Atlantic"*.

18.11.2011:

Xiaoming, Dr. Z., Atmospheric, Oceanic and Planetary Physics, Department of Physics, University of Oxford, Oxford, UK: *"Significant sink of ocean eddy energy near western boundaries and its potential influence on the large-scale ocean circulation"*.

14.12.2011:

Widmann, Dr. M., School of Geography, Earth and Environmental Sciences, University of Birmingham, Birmingham, UK: *"Skill, correction and downscaling of GCM-simulated precipitation"*.

15.12.2011:

Fuckar, Dr. N., International Pacific Research Center at University of Hawaii, Honolulu, Hawaii, USA: *"On the role of extratropical ocean circulation in the tropical-extratropical and interhemispheric interaction"*.

Seminar Research Unit Maritime Meteorology

06.01.2011:

Fueglistaler, Prof. Dr. S., Princeton University, Princeton, USA: *"Troposphere to Stratosphere Transport in the Tropics"*.

20.01. 2011:

Krüger, Prof. Dr. K., IFM-GEOMAR, Kiel: *"Was hat der Ozean mit der Ozonschicht zu tun?"*.

27.01. 2011:

Hieronymi, M., IFM-GEOMAR, Kiel: *"A different approach for Monte Carlo radiative transfer simulations - Proposal for underwater light fluctuations"*.

03.02.2011

Harlaß, J., IFM-GEOMAR, Kiel: *"Detailed assessment of climate variability of the Baltic Sea for the period 1958-2009"*.

10.02.2011

Fuhlbrügge, S., IFM-GEOMAR, Kiel: *"Meteorologische Auswertung der DRIVE-Poseidon Kampagne im tropischen Ostatlantik"*.

ne im tropischen Ostatlantik".

17.02.2011

Metzner, D., IFM-GEOMAR, Kiel: *"Climate impact and feedback of the Los Chocoyos eruption in the MPI-ESM"*.

17.02.2011

Fuhlbrügge, S., IFM-GEOMAR, Kiel: *"Atmospheric boundary layer determination for ship campaigns"*.

Metzner, D., IFM-GEOMAR, Kiel: *"Climate (ocean) response on the large volcanic eruption Los Chocoyos in the MPI ESM"*.

23.06.2011

Volosciuk, C., TU Braunschweig und IFM-GEOMAR, Kiel: *"Scaling of precipitation extremes as a function of model resolution"*.

30.06.2011

Claus, M., IFM-GEOMAR, Kiel: *"The Gulf stream extension region: its dynamics and possible influences on the atmosphere"*.

Mohr, V., IFM-GEOMAR, Kiel: *"Tropical Widening"*.

07.07.2011

Voß, A., IFM-GEOMAR, Kiel: *"Statistical modeling of Baltic Sea storm surges"*.

Behrens, L., IFM-GEOMAR, Kiel: *"Climate relevant processes relevant for changing Arctic sea ice cover"*.

Gollan, G., IFM-GEOMAR, Kiel: *"An analysis of Northern winter circulation anomalies for the ERA40 period"*.

FB2 Seminar

10.01.2011

Rehdanz, Prof. Dr. K., IFW, Kiel: *"Assessing the economics impact of ocean acidification"*

17.01.2011

Form, A., IFM-GEOMAR, Kiel: *"Einfluss des anthropogenen Klimawandels auf die Ökophysiologie der Kaltwasserkoralle Lophelia pertusa"*

19.01.2011

Ryabenko, E., IFM-GEOMAR, Kiel: "Nitrogen isotope studies in the Atlantic and Pacific OMZs"

24.01.2011

Meier, S., GPI, Universität Kiel: "Coccolith size and weight response of *Emiliania huxleyi* to modern and past natural environmental changes: examples from the Baltic and Mediterranean Sea"

26.01.2011

Bohlen, L., IFM-GEOMAR, Kiel: "Benthic nitrogen cycling across the Peruvian oxygen minimum zone"

26.01.2011

Hauss, H., IFM-GEOMAR, Kiel: "Nitrogen Nitrogen fluxes in the Eastern Tropical Atlantic: Hints from the zooplankton".

31.01.2011

Olgun, N., IFM-GEOMAR, Kiel: "Can volcanic ash boost the oceanic food-web?"

07.02.2011

Laruelle, Dr. G., Utrecht University, The Netherlands: "The global coastal ocean: Typologies and applications from retention of riverine nutrients to CO₂ sources and sinks in estuaries and continental shelves"

09.02.2011

Glock, N., IFM-GEOMAR, Kiel: "Environmental influences on the pore density in *Bolivina spissa*. A possible paleoproxy for redox-conditions".

Mallon, J., IFM-GEOMAR, Kiel: "Benthic foraminifera from the Peruvian OMZ and their response to low-oxygen conditions"

16.02.2011

Franz, J., IFM-GEOMAR, Kiel: "Distribution of phytoplankton in the tropical Eastern South Pacific in relation to hydrographic and nutrient conditions"

01.03.2011

Schäfer, Dr. H., University of Warwick, UK: "Phylogenetic and functional diversity of micro-

bial populations degrading dimethylsulfide and related compounds"

07.03.2011

Bordelon, L., GPI, Universität Kiel: "CO₂ Dependent DOM production"

09.03.2011

Hahn, J., IFM-GEOMAR, Kiel: "Mixing and Variability of the OMZ in the tropical North East Atlantic Ocean - First Steps/First Estimates"

Lübbecke, J., IFM-GEOMAR, Kiel: "Some Basics of Ocean Modeling and Applications in the SFB 754"

16.03.2011

Bösch, T., IFM-GEOMAR, Kiel: "Millennial scale changes in temperatures and productivity offshore Peru"

Mosch, T., IFM-GEOMAR, Kiel: "Habitats across the Peruvian OMZ - What are the controls?"

21.03.2011

Hu, M., IFM-GEOMAR, Kiel: "Comparative studies on acid-base regulation in a high CO₂ environment - convergent evolution of cephalopods and fish?"

23.03.2011

Löscher, C., IFM-GEOMAR, Kiel: "Microbial key processes in the nitrogen cycle off"

Molier-Vogel, E., IFM-GEOMAR, Kiel: "Nitrogen cycle recorded in the sediment in spatial and temporal scale"

30.03.2011

Banyte, D., IFM-GEOMAR, Kiel: "Diapycnal mixing in the North Tropical Atlantic OMZ"

Schlundt, M., IFM-GEOMAR, Kiel: "Glider-measurements in the tropical oceans"

11.04.2011

Kreher, K., NIWA/Lauder: "The hunt for halogen oxides (IO and BrO) in the marine boundary layer: From the Tropics to the Antarctic"

13.04.2011

Kriest, I., IFM-GEOMAR, Kiel: "Respective influences of circulation and biogeochemical param-

eters on simulated nutrient and oxygen fields"

Somes, C., IFM-GEOMAR, Kiel: "Balancing the fixed nitrogen budget in the global ocean"

18.04.2011

Lischka, S., IFM-GEOMAR, Kiel: "Sensitivity of *Limacina helicina* (Pteropoda) to ocean acidification and warming - What we know and what I would like to know"

20.04.2011

Flöter, J., IFM-GEOMAR, Kiel: "Modeling mid-Cretaceous climate with a coupled AOGCM (KCM)"

Kiko, Dr. R., IFM-GEOMAR, Kiel: "Zooplankton Ecophysiology - Cape Verde Island and Namibian waters"

27.04.2011

Pisso, Dr. I., JAMSTEC, Japan: "Constraints on CO₂ flux emissions: reconstructions of in-situ measurements from Lagrangian stochastic"

02.05.2011

Ryabenko, Dr. E., IFM-GEOMAR, Kiel: "Nitrogen isotopes in the Atlantic and Pacific OMZs"

12.05.2011

Ryabenko, Dr. E., IFM-GEOMAR, Kiel: "Nitrogen isotopes in the Atlantic and Pacific oxygen minimum zones"

16.05.2011

Ho, D., University of Honolulu, Hawaii, USA: "Towards a universal relationship between wind speed and air-sea gas exchange"

18.05.2011

Noffke, A., IFM-GEOMAR, Kiel: "The benthic phosphorus and iron source across the Peruvian OMZ"

Wuttig, K., IFM-GEOMAR, Kiel: "Temporal changes in the Biogeochemistry of Mn, Fe and Al after an artificial dust deposition to large mesocosms (DUNE project)"

23.05.2011

Becker, M., Universität Kiel: "CRDS-based field measurements of surface water pCO₂ and its

isotope ratio"

25.05.2011

Heller, Dr. M., IFM-GEOMAR, Kiel: "The impact of superoxide on trace metal redox cycles, reactions with organic material and dust dissolution in the open ocean"

Kalvelage, T., IFM-GEOMAR, Kiel: "Spatial variability and oxygen sensitivity of N-cycle pathways in the OMZ off Peru"

30.05.2011

Schneider, A., IFM-GEOMAR, Kiel: "CFC-12 and SF6 measurements in the tropical Atlantic"

01.06.2011

Großkopf, T., IFM-GEOMAR, Kiel: "Oxygen minimum zones - novel niches for nitrogen fixing prokaryotes"

Schunck, H., IFM-GEOMAR, Kiel: "Metagenomics and metatranscriptomics in the Peruvian OMZ"

06.06.2011

Bittig, H., IFM-GEOMAR, Kiel: "Oxygen Sensor Calibration & Characterization – Everything you want to know about Optodes"

15.06.2011

Czeschel, Dr. R., IFM-GEOMAR, Kiel: "Mid-depth circulation of the eastern tropical South Pacific and its link to the oxygen minimum zone"

Lorenzen, J., IFM-GEOMAR, Kiel: "A new sediment core from the Bedoulia (lower Aptian) stratotype at Roquefort-La-Bédoule, SE France"

20.06.2011

Baars, Dr. O., IFM-GEOMAR, Kiel: "Distribution and speciation of zinc, cadmium and cobalt in the Southern Ocean"

27.06.2011

Mecking, Dr. S., Univ. Washington, Seattle, USA: "North Pacific decadal variability ranging from tracer ages via O₂ to pH"

04.07.2011

Kahru, Dr. M., Scripps Institution of Oceanography, La Jolla, USA: "Satellite Ocean Color Appli-

cations: from Global to Arctic to the Baltic"

06.07.2011

Schwarzkopf, F., IFM-GEOMAR, Kiel: "High-resolution modeling of the Tropical Oceans – Ventilation pathways into the northern Atlantic OMZ"

11.07.2011

Taucher, J., IFM-GEOMAR, Kiel: "Investigating the effects of global warming on the marine carbon cycle - a combination of biogeochemical modelling and experimental studies"

13.07.2011

Ehlert, C., IFM-GEOMAR, Kiel: "Changes in silicate utilization and upwelling intensity off Peru since the LGM – insights from silicon and neodymium isotopes"

Grasse, P., IFM-GEOMAR, Kiel: "Silicon Isotopes as a Tracer for Silicic Acid Utilization in the Peruvian Upwelling"

10.10.2011

Deutsch, Prof. C., UCLA, Los Angeles, USA: "A climatic pulse in the heart of the oxygen minimum zone"

27.10.2011

Wiltshire, Prof. Dr. K., AWI Bremerhaven/Biol. Anstalt Helgoland: "Helgoland Roads: 45 Years of change in the North Sea"

31.10.2011

Altabet, Prof. M., UMASS, School of Marine Sciences, Dartmouth, MA, USA: "Reevaluating interactions and feedbacks between global ocean nitrogen sources and sinks"

07.11.2011

Körtzinger, Prof. A., IFM-GEOMAR, Kiel: "The Cape Verde Ocean Observatory – a scientific hotspot and future strategic research platform".

21.11.2011

Lohbeck, K., IFM-GEOMAR, Kiel: "Rapid evolution of a key phytoplankton species: 500 generations in a high CO₂ world"

24.11.2011

Dippner, PD Dr. J., Leibniz-Institut für Ostsee-

forschung, Warnemünde: "Quo vadis, Ostsee?"

28.11.2011

Lischka, S., IFM-GEOMAR, Kiel: "Synergistic effects of temperature and CO₂ on the dissolution response of the thecosome pteropods *Limacina helicina* and *L. retroversa* during the Arctic winter"

Seibel, Prof. B., University of Rhode Island: "Existing oxygen levels are the threshold for marine life in oxygen minimum zones"

05.12.2011

Lohmann, M., IFM-GEOMAR, Kiel: "CVOO Cape Verde Ocean Observatory – a logistical focus"

12.12.2011

Stöven, T., IFM-GEOMAR, Kiel: "Ventilation processes and anthropogenic carbon of the Mediterranean Sea based on CFC-12 and SF6 measurements"

FB4 / SFB574 Seminar

28.01.2011

Hoernle, Dr. H., IFM-GEOMAR, Kiel: "New insights and ongoing studies concerning interaction between the Galapagos Hotspot and the Cocos-Nazca Spreading Center"

Krastel, Dr. S., IFM-GEOMAR, Kiel: "Lake Van Drilling Project PaleoVan"

01.04.2011

Hauff, Dr. F., IFM-GEOMAR, Kiel: "SO199 CHRISP (Christmas Island Seamount Province): Age and geochemistry of enigmatic intraplate volcanism in the southeast Indian Ocean"

Behrmann, Dr. J., IFM-GEOMAR, Kiel: "Looking deep at Walvis Ridge, offshore Namibia. Observation from Maria S. Merian Cruise 17/1"

27.05.2011

Stipp, Dr. M., Kutterolf, Dr. S., IFM-GEOMAR, Kiel: "Costa Rica Seismogenesis Project (CRISP) - IODP expedition 334"

01.07.2011

Augustin, Dr. N., IFM-GEOMAR, Kiel: "Calcium

and strontium isotope ($\delta^{44/40}\text{Ca}$) fractionation in high temperature hydrothermal systems: Insights from 4°48' S, MAR"

Shulgin, A., IFM-GEOMAR, Kiel: "Subduction offshore northern Sumatra: crustal structure and its variations across the segment boundary"

26.08.2011

Petersen, Dr. S., IFM-GEOMAR, Kiel: "Hydrothermal systems in the Manus Basin, Papua New Guinea: First results of the SONNE 216 cruise"

Völker, Dr. D., IFM-GEOMAR, Kiel: "Analysis of submarine landsliding in the rupture area of the 27 February 2010 Maule Earthquake, Chile"

30.09.2011

Geldmacher, Dr. J., IFM-GEOMAR, Kiel: "What is happening with IODP?"

Klaucke, Dr. I., IFM-GEOMAR, Kiel: "Acoustic imaging of cold seeps in the Black Sea"

28.10.2011

Heydolph, Dr. K., IFM-GEOMAR, Kiel: "The Shatsky Rise: the origin of an oceanic plateau"

Crutchley, Dr. G., IFM-GEOMAR, Kiel: "Processes driving gas seepage at Hydrate Ridge, offshore Oregon"

25.11.2011

Kwasnitschka, Dr. T., IFM-GEOMAR, Kiel: "Seafloor Visualization: Hard Science from Pretty Pictures"

Ullemeyer, Dr. K., IFM-GEOMAR, Kiel: "Textures and physical anisotropies of rocks evaluated from neutron diffraction data and laboratory experiments"

Other Seminars

Sonderkolloquium Nachfolge Macke

20.01.2011:

Fink, Prof. Dr. A., Institut für Geophysik und Meteorologie der Univ. zu Köln: „Dynamik und Vorhersagbarkeit ausgewählter wetter- und klimarelevanter atmosphärischer Prozesse über

Nordafrika und dem tropischen Atlantik“.

Krüger, Prof. Dr. K., IFM-GEOMAR Kiel: „Was hat der Ozean mit der Ozonschicht zu tun?“.

Bühler, Prof. Dr. S., Lulea University of Technology, Kiruna, Sweden: „Satellitenfernerkundung von Wasserdampf und Wolken“.

21.01.2011:

Raible, PD Dr. C., Physics Institute, University of Bern, Switzerland: „Klimavariationen gestern und heute – eine Brücke zum Verständnis der Zukunft?“.

Matthes, Prof. Dr. K., FU Berlin: „Quantifizierung natürlicher Klimavariabilität“.

24.01.2011:

Haynert, K. and **Glock, N.**, Seminar-Biomineralisierung, IFM-GEOMAR, Kiel: „Biomineralization in Foraminifera“.

03.02.2011 „Kiel – Stadt der jungen Forscher 2011“ Wir erforschen die Hintergründe des IPCC-Berichts oder die Wahrheit über den Klimawandel – 11. Klasse der Max-Planck-Schule Kiel.

Biostoch, A., IFM-GEOMAR, Kiel: „Land unter? Meeresspiegelanstieg“.

Karstensen, J., IFM-GEOMAR, Kiel: „Geht unsere Heizung aus? Golfstrom und Klimawandel“.

Krüger, K., IFM-GEOMAR, Kiel: „Heizen Aschewolken das Klima an? Vulkane und Klimawandel“.

Latif, M., IFM-GEOMAR, Kiel: „Was macht die Wetterküche? – Nordatlantische Oszillation und ihre Auswirkungen“.

Martin, T., IFM-GEOMAR, Kiel: „Wie Warm wird es wirklich? Modellierung/Prognosen“.

Martin, T., IFM-GEOMAR, Kiel: „Fieberthermometer der Erde? Gletscher und Klimawandel“.

10.05.2011

Krüger, Prof. Dr. K., IFM-GEOMAR, Kiel: „Vul-

kane und Klima: Lokale Ursache – globale Wirkung?“. Reihe Wissen schaffen.

12.05.2011:

Haynert, K., Butterbrotseminar P-OZ, IFM-GEOMAR, Kiel: „Response of benthic foraminiferal species *Ammonia aomoriensis* at high $p\text{CO}_2$ “.

05.07.2011:

Schwarzkopf, F.U., IFM-GEOMAR (SFB754 - Young Scientists seminar), Kiel: "High-resolution modelling of the Tropical Oceans - Ventilation pathways into the northern Atlantic OMZ".

15.10.2011:

Chandranath, Dr. B., Max Planck Research Group - Marine Isotope Geochemistry, Institute for Chemistry and Biology of the Marine Environment (ICBM), University of Oldenburg, Oldenburg: "Seawater Neodymium Isotope Ratios in the Pacific Sector of the Southern Ocean".

29.11.2011:

Krebs-Kanzow, Dr. U., IfG, CAU Kiel: "Modeling of the Closure of the Central American Seaway in the Pliocene/Miocene".

19.12.2011:

Weiner, A., Universität Tübingen: „Genetic studies on planktonic foraminifera in the Caribbean“.

Jentzen, A., Universität Greifswald: „Benthic foraminifera-based reconstruction of environmental changes during the last 150 years in the Skagerrak and Kattegat area“.

Ley, R., Universität Jena: „Petrographic and hydrological investigations in Erdeborn – a geological approach to an archeological question“.

Löb, C., Universität Bochum: „The onset of anoxic conditions in the lower Barremian of the Boreal Realm evidenced by benthic foraminifera“.

7.5 Expert Activities

Bange, H.W.:

- National Co-Representative, SOLAS (Surface Ocean – Lower Atmosphere Study).
- Co-Chair of Working Group 3 of 'The European Cooperation in the field of Scientific and Technical Research' (COST) Action 735: "Tools for Assessing Global Air-Sea Fluxes of Climate and Air Pollution Relevant Gases".

Behrmann, J.H.:

- Member, Board of Governors, Deutsches Geoforschungszentrum Potsdam
- Scientific Advisor (PhD candidates), University of Freiburg.
- Scientific Coordinator, DFG-SPP "SAMPLE" (South Atlantic)

Berndt, C.:

- Member, Sonne Gutachter Kommission

Biastoch, A.:

- Co-chair, SCOR WG 136 "Climatic Importance of the Greater Agulhas System"

Böning, C.:

- Member, wiss. Ausschüsse HLRN und DKRZ
- Member, Wissenschaftliche Steuergruppe des BMBF-Verbundvorhabens NORDATLANTK

Brandt, P.:

- Chair, CLIVAR-TACE Observations Working-Group
- Co-chair, CLIVAR Atlantic Implementation Panel
- Vice-President, EGU Division on Ocean Sciences
- Science Secretary for Deep Oceans and Ocean Climate in the Ocean Science Division of EGU
- Member, AMMA International Scientific Steering Committee
- Member, PIRATA Scientific Steering Group
- Member, Medium research vessel Steering

Group

Clemmesen, C.:

- Member, Deutsche Wissenschaftliche Kommission für Meeresforschung (DWK).
- Member, ICES Working Group on Recruitment Processes.
- Member and Secretary elect, Early Life history section of the American Fisheries Society.

Devey, C.:

- Deutscher Repräsentant von SCOR (DFG)

Dullo, W.-Chr.:

- Member, Fachkollegium 314 „Geologie und Paläontologie“ der Deutschen Forschungsgemeinschaft (DFG)
- Member, Award Committee for Humboldt- and Wilhelm Bessel Research Awards, Alexander von Humboldt Foundation
- Chair, Bildungsstiftung Schleswig-Holstein
- Co-chair, Maritimes Forum Kiel
- Representative of Germany, CIESM
- Chair, Scientific Advisory Board, Deutsches Meeresmuseum Stralsund
- Chair, Verein zur Förderung der GeoUnion Alfred-Wegener-Stiftung e.V.
- Treasurer, GeoUnion Alfred-Wegener-Stiftung e.V.
- Member, Executive Committee, Geologische Vereinigung
- Member, Award Committee for Humboldt- and Wilhelm Bessel Research Awards, Alexander von Humboldt Foundation

Engel, A.:

- Member, BIOACID Steering Committee
- Member, EPOCA Steering Committee
- Planing Group Member, Japanese German Frontiers of Sciences 2012, AvH Gesellschaft
- Member, SOLAS Steering Committee

Flüh, E, R.:

- Member, FKPE (Forschungskollegium Physik des Erdkörpers e.V.)

Frank, M.:

- Member, International Steering Committee, GEOTRACES program
- Member, Beirat Kölner Hochleistungs-Beschleuniger-Massenspektrometer, DFG
- Mitglied, Beirat Leibniz Labor für Altersbestimmung und Isotopenforschung der CAU Kiel
- Member, Management Committee of COST Action ES0801 (Ocean Chemistry)

Froese, R.:

- Coordinator, FishBase Consortium.
- Coordinator, AquaMaps Consortium.
- Member, DFG Arbeitsgruppe zu Biodiversitätsdaten.

Herzig, P.M.:

- Maritime Coordinator of the State of Schleswig-Holstein
- Maritime Ambassador of the European Commission
- Member, Executive Board, Leibniz Association, Berlin
- Chair, Section „Environmental Research“ of the Leibniz Association (WGL)
- Chair, Partnership for Observation of the Global Oceans
- Member, Board of Governors, Alfred Wegener Institut für Polar- und Meeresforschung, Bremerhaven
- Member, Board of Governors, BGR, Hannover
- Member, External Advisory Council, Halifax Marine Research Institute (HMRI), Halifax, Canada
- Member, Foresight Panel, Federal State of Schleswig-Holstein

Hinrichsen, H.-H.:

- Member, ICES Working Group on Modeling of Physical/Biological Interactions.

Imhoff, J.F.:

- Chairman, ICBS Subcommittee on the Taxonomy of Phototrophic Bacteria.
- Scientific steering committee of the International Symposium of Phototrophic Bacteria.

Karstensen, J.:

- Member, Data Buoy Cooperation Panel (DBCP)
- Member, OceanSITES Steering Team
- Member, OceanSITES Data Management Team
- German representative COST Aktion ES0904 European Glider Initiative
- German representative COST Aktion ES1001 SMOS Mission Oceanographic Data Exploitation

Kassens, H.:

- Director, Otto Schmidt Laboratory for Polar and Marine Research, St. Petersburg
- Chair, Master Program for Applied Marine and Polar Sciences (POMOR)
- Chair, Wissenschaftlicher Beirat der Deutschen Gesellschaft für Polarforschung
- Chair, Working group „Arctic Shelf Seas“ of ICARP II (International Conference on Arctic Research Planning)
- Chair, AOSB Program New Research Generation (NRG)
- Member, ICARP II Marine Roundtable
- Member, International Ocean Drilling Program (IODP) Detailed Planning Group for Arctic Drilling
- Member, International Arctic Polynya Programme (AOSB; IAPP)
- Member, Shelf-Basin Exchange Initiative (AOSB; SBE)
- Member, German Committee of the „Inter-

national Arctic Science Committee“ and the „Science Committee on Antarctic Research“

- Member, Kommission unabhängiger Sachverständiger zur Beurteilung der Umweltauswirkungen von Forschungstätigkeiten in der Antarktis
- Representative of Deutsche Forschungsgemeinschaft (German Research Foundation), ESF Standing Committee for European Boards for Marine and Polar Sciences

Krahmann, G.:

- Member, Scientific Advisory Committee Europe Mer, Brest, France

Körtzinger, A.:

- Member, Scientific Advisory Board, Leibniz Institute for Baltic Sea Research, Warnemünde
- Member, Senate Commission on Oceanography, German Research Foundation
- Fellow, Kiel Earth Institute (KEI)

Kopp, H.:

- Member, Board of the Deutsche Geophysikalische Gesellschaft

Krastel, S.:

- Member, IODP Scientific Technology Panel

Latif, M.:

- Ordentliches Mitglied, Akademie der Wissenschaften in Hamburg
- Member, Club of Rome

Lehmann, A.:

- Member, BALTEX Scientific Steering Group
- Vice Chair, Working Group on POSTBALTEX

Petersen, S.:

- Member, InterRidge Working Group on Massive Sulfides
- Member, Steering Committee of the SPC-SOPAC-EU Pacific Marine Minerals and Deep Sea Mining Assessment Project

Piatkowski, U.:

- Member, ICES Working Group on Cephalo-

pod Life Cycles and Fisheries.

- Member, Scientific Advisory Board of the Annette-Barthelt-Foundation.
- Member, Cephalopod International Advisory Council (CIAC).

Quack, B.:

- Member, Thesis Committee Stefan Raimund, Université de Bretagne Occidentale, Brest, Station Biologique Roscoff, France
- Member, Member of COST Action 735 'Tools for Assessing Global Air-Sea Fluxes of Climate and Air Pollution Relevant Gases' European Concerted Research Action.
- Member, Steering Committee SHIVA (Stratospheric Ozone: Halogens Impacts in a Varying Atmosphere), EU-Project

Reusch, T.:

- Member, Advisory Board DFG-Schwerpunktprogrammes 'Host-parasite coevolution'
- Member, Advisory Board BMBF-Verbundvorhabens 'Ocean Acidification – Ozeanversauerung- BIOACID'

Riebesell, U.:

- Coordinator, German coordinated project on Biological Impacts of Ocean Acidification (BIOACID)
- Deputy coordinator, European Project on Ocean Acidification (EPOCA)
- Chair, IOC working group for preparing a Guide for Best Practices in Ocean Acidification Research
- Member, SOLAS/IMBER Joint Carbon Implementation group
- Member, SOLAS-IMBER Working Group on Ocean Acidification
- Member, National Environment Research Council (NERC) writing group commissioned to develop a UK programme on ocean acidification
- Member, U.S. National Research Council

- (NRC) commission for preparing a research strategy for Ocean Acidification Monitoring, Research and Impacts Assessment
- Member, Scientific Advisory Board, Chinese project Carbon cycling in China Seas (CHOICE-C)
- Project leader, Collaborative Research Centre Climate – Biogeochemistry Interactions in the Tropical Ocean

Quack, B.:

- Member, Member of COST Action 735 'Tools for Assessing Global Air–Sea Fluxes of Climate and Air Pollution Relevant Gases' European Concerted Research Action.
- Member, Steering Committee SHIVA (Stratospheric Ozone: Halogens Impacts in a Varying Atmosphere), EU-Project

Rumohr, H.:

- Member ICES Benthos Ecology Working Group (BEWG)
- Member, ICES Working Group on Biodiversity
- Member, ICES SCICOM (Alternate)

Schaber, M.:

- Member, ICES WGBIFS: Baltic International Fish Survey Working Group

Schmidt, J.O.:

- Member, ICES Working Group on Zooplankton Ecology
- Member, ICES PGHERS: Planning group for herring surveys
- Member, ICES HAWG: Herring assessment working group for the area south of 62°N

Schönfeld, J.:

- Secretary, Sub-commission on Cretaceous Stratigraphy, Germany
- Regular member, Subkommission für Kreide-Stratigraphie

Sommer, U.:

- Chair, Board of Trustees of the Max-Planck-

Institute for Evolutionary Biology, Plön.

- Chair, Scientific Advisory Board, Institute for Limnology of the Austrian Academy of Sciences, Mondsee, Austria

Spielhagen, R.F.:

- Member, German Steering Committee, Arctic Paleoclimate and its Extremes (APEX) (IASC Project)

Tanhua, T.:

- Chair, Scientific Steering Group, The International Ocean Carbon Coordination Project (IOCCP)
- Member, Global Ocean Ship-based Hydrographic Investigations Panel (GO_SHIP)
- Member, CLIVAR Global Synthesis and Observation Panel (GSOP)
- Member, CARBOCHANGE (EU FB7), Chair, Intellectual Property Rights Panel
- Member, Scientific Steering Group, SOLAS/IMBER Carbon Working Group 2

Tegtmeier, S.:

- Co-lead SPARC Data Initiative

Thetmeyer, H.:

- Member, ICES Working Group on Environmental Interactions of Aquaculture (WGEIM)

Treude, T.:

- Member, Scientific Steering Committee and chapter lead of the UNEP-GRID book project „Frozen Heat - A UNEP global outlook on methane gas hydrate“
- Member, management committee and work group leader of the EU-COST project PERGAMON (Permafrost and gas hydrate related methane release in the Arctic and impact on climate change: European cooperation for long-term monitoring)

Visbeck, M.:

- Member, Steuergruppe BMBF Verbundprojekt „Nordatlantik“
- Member, Network "The Future Ocean", CAU,

Kiel

- Member, IOC Working Group Advisory Body of Experts on the Law of the Sea
- Member, Senatskommission für Ozeanographie
- Speaker, Cluster of Excellence "The Future Ocean"
- Co-Chair, CLIVAR Scientific Steering Group
- Member, Nationales Komitee für Global Change Forschung
- Member of the ICSU Transition Team, the interim governing body of the new global sustainability initiative „Future Earth“
- Member, AGU Ocean Science Section Executive Committee
- Member, 1999-present NOAA-OAR/OGP Climate observing system council

Voss, R.:

- Member, GLOBEC SPACC/IOC Study Group on Regional Scale Ecology of Small Pelagic Fish.
- Member, ICES Study Group on Baltic Fish and Fisheries Issues in Support of the Baltic Sea Regional Project.
- Member, ICES Study Group on Multispecies Assessments in the Baltic.
- Member, ICES Study Group on Multispecies Model Implementation in the Baltic.

Wahl, M.:

- Board of Trustees of Terramare, Wilhelmshaven
- National representative to the Baltic Marine Biologists Committee

Wallace, D.W.R.:

- Chair, International SOLAS programme (IGBP, WCRP, SCOR, CACGP)
- Speaker SFB 754
- Coordinator SOPRAN Project (Surface Ocean Processes in the Anthropocene) National Coordinated Project (BMBF)

- Member, Advisory Board, Hanse Wissenschaftskolleg, Delmenhorst
- Member, Advisory Board, Alfred-Wegener-Institut für Polar- und Meeresforschung, Bremerhaven
- Member, Conseils Scientifique, L'Institut Universitaire Européen de la Mer (IUEM), Brest, France
- Member, Management Committee, WG 5 of COST Action 735 "Tools for Assessing Global Air-Sea Fluxes of Climate and Air Pollution Relevant Gases".
- Member, OceanSITES Steering Committee

Wegner, C.:

- Chair, ICARP II Marine Roundtable
- Chair, Arctic in Rapid Transition (ART) Initiative
- Member, OMAE Scientific Committee – Coastal Engineering

Weinrebe, W.:

- Member, Advisory Board, German Hydrographic Society (DHG)
- Member, wissenschaftlich-technische Arbeitsgruppe Ersatzbau SONNE

7.6 Editorial Boards

Bauch, H. A.:

- Quaternary Science Reviews, Paleoceanography (Associate Editor)

Behrmann, J.H.:

- Journal of Geological Research (Editorial Board)

Berndt, C.:

- Marine Geology (Guest editor)

Bialas, J.:

- Marine Geology (Guest Editor)

Böning, C.:

- Ocean Modelling (Editorial Board)

Böttger-Schnack, R.:

- World Register of Marine Species (WoRMS) (*Copepodenfamilie Oncaeididae*) (Associate Editor)

Dullo, W.-Chr.:

- International Journal of Earth Sciences, IJES (Editor in Chief)
- Facies (Associate Editor)

Eizaguirre, C.:

- Molecular Ecology (Guest Editor)
- Frontiers in Genetics (Review Board Member)

Fietzke, J.:

- Analytical and Bioanalytical Chemistry (Guest Editor)

Froese, R.:

- Acta Ichthyologica et Piscatoria (Editorial Board)
- Journal of Applied Ichthyology (Editorial Board)

Greatbatch, R.:

- Ocean Dynamics (Associate Editor)

Grevemeyer, I.:

- Geophysical Journal International (Editorial Board)

Imhoff, J.F.:

- International Microbiology, (Editorial Board).

Karstensen, J.:

- Journal of Operational Oceanography (Editorial Board)

Lehmann, A.:

- Boreal Environmental Research (Editorial Board)
- Oceanological and Hydrobiological Studies (Editorial Board)

Oschlies, A.:

- Ocean Dynamics (Editorial Board)
- Ocean Modelling (Editorial Board)

Piatkowski, U.:

- Aquatic Biology (Review Editor)
- Endangered Species Research (Review Editor).

Reusch, T.:

- Conservation Genetics (handling editor)
- Marine Biology (handling editor)

Riebesell, U.:

- Biogeosciences (Co-Editor)

Santer, B.:

- Marine Biology (Assistant to the editorial staff)

Semenov, V.:

- IPCC Special Report on Extreme Events (Review Editor)

Sommer, U.:

- Protist (Associate Editor)
- Oecologia (Handling Editor)
- International Review of Hydrobiology (Editorial Board)
- Basic and Applied Ecology (Editorial Board)
- Aquatic Sciences (Editorial Board).
- Ecological Studies (Springer) (Series Editor)
- Marine Biology, Springer, (Editor-in-Chief)

Spielhagen, R. F.:

- Polar Research, Geosciences (Subject Editor)

Tanhua, T.:

- Earth System Science Data (Guest editor)

Treude, T.:

- Biogeosciences (Editorial Board)

Wallace, D. W. R.:

- Science (Member of the Board of Reviewing Editors)

7.7 Honors & Awards

Appelhans, K.:

- Posterpreis, 45. European Marine Biology Symposium (EMBS) in Edinburgh, UK, 23.-27.08.2010.

Biastoch, A.:

- Golden Spike Award for High-Performance Computing at HLRS, Stuttgart, 05.10.2010.

Dengg, J.:

- Kai-Uwe v. Hassel Förderpreis, Hermann Ehlers Stiftung, 18.11.2010.

Dmitrenko, I.:

- Publikationspreis, IFM-GEOMAR, Kategorie FB1

Dullo, W.-Chr.:

- Werner Heisenberg-Medaille, Alexander von Humboldt-Stiftung, 31.03.2011.

Herzig, P.:

- Verdienstorden des Landes Schleswig-Holstein, 05.06.2009.

Hetzinger, S.:

- Best non-student poster presentation prize, 2nd International Sclerochronology Conference, Mainz, 28.07.2010.

Kopp, H.:

- Gauss Lecturer, Deutsche Geophysikalische Gesellschaft, 6. April 2011.

Maczeassek, K.:

- Posterpreis, 45. European Marine Biology Symposium (EMBS) in Edinburgh, UK, 23.-27.08.2010.

Marandino, C.:

- Helmholtz-Nachwuchsgruppe, November 2011

Mohr, W.:

- Publikationspreis, IFM-GEOMAR, Kategorie FB2

Nürnberg, D.:

- außerplanmäßige Professur, Universität Kiel, 19.05.2010.

Pansch, C.:

- Bester Vortrag, 45. European Marine Biology Symposium (EMBS) in Edinburgh, UK, 23.-27.08.2010.

Petric, G.:

- Highly Cited Author Award 2005-2009, "A global survey of perfluorinated acids in oceans", Marine Pollution Bulletin (Elsevier), June 2010

Planert, L.:

- Publikationspreis, IFM-GEOMAR, Kategorie FB4

Scholz, F.:

- Annette Barthelt-Preis, Annette Barthelt Stiftung and BMBF, 27.05.2011

Toohey, M.:

- Young Scientists' Outstanding Poster Presentation (YSOPP) Award der European Geosciences Union (EGU), Vienna, Austria, 02.-07.05.2010

Winder, M.:

- Publikationspreis, IFM-GEOMAR, Kategorie FB3

7.8 Technology Transfer / Patents

Eisenhauer A.: Verfahren zur Kalibrierung von Beckenmodellen mittels Ca-Isotopen Thermometrie, DE 10 2011 112 292.7, erteilt.

Imhoff, J.F., Wiese, J., Zinecker, H., Kajahn, I., Nagel, K., Schneemann, I.: Herstellung und Verwendung antibakterieller, antiproliferativer und antiphytopathogener Benzanthrone. An-

meldetag: 28.01.2010 (PCT/DE2010/001375), Offenlegung: 15.09.2011, PVA-Nummer: DE 10 2010 006 245.A1

Petric, G.: Verfahren zum Austreiben von Gasen und leichtflüchtigen Substanzen aus Wasser mittels Hochfrequenz, Deutsches Patent- und Markenamt, Germany, DE000010164434A1, erteilt.

Wallmann K., Haeckel M.: Verfahren zur Erdgasförderung aus Kohlenwasserstoff-Hydraten bei gleichzeitiger Speicherung von Kohlendioxid in geologischen Formationen, Deutsches Patent- und Markenamt, Germany, DE 10 2009 007 453.8, erteilt 27.02.2011.

8. Teaching Courses

8.1 External teaching courses

Biastoch, A.: Lehre im Rahmen der GATEWAYS Summer School, Cardiff, UK, 20.-24.07.2011.

Biastoch, A.: Lehre im Rahmen des 2nd DBCP Africa/Western Indian Ocean Capacity Building Workshop, Mauritius, 02.-06.05.2011.

Böttger-Schnack, R.: Lehre im Rahmen des "Pre-Conference Training Workshop on Morphology and Systematics of Copepods", El Colegio de la Frontera Sur (ECOSUR), Chetumal, Quintana Roo, Mexico, 04.-08.07.2011.

Brandt, P.: *Tropical Oceanography*. Physics of the Ocean. DPG - School, Physikzentrum Bad Honnef, 12.09.2011.

Dengler, M.: *Mixing in the Ocean's Interior*. Physics of the Ocean. DPG - School, Physikzentrum Bad Honnef, 15.09.2011.

Haeckel M.: Gas hydrates in the marine environment: From cold seeps to gas production & CCS. Graduate School "BuildMoNa", University of Leipzig, 16.09.2011.

Haeckel M.: Modelling of methane budgets & Gas hydrates as a potential energy resource. ECORD Summerschool "Subseafloor fluid flow and gas hydrates", MARUM, University of Bremen, Germany, 14.-15.09.2011.

Klagge, T.: Data management, Master Program for Polar and Marine Sciences POMOR/St. Petersburg State University, St. Petersburg, Russia, 05.-09.12.2011.

Körtzinger, A.: Modul "CO₂ in the Ocean" (4 ETCS points), Lehre im Rahmen des Master-Programms "Oceanografía", Universidad de Las Palmas de Gran Canaria, Las Palmas, 10.-14.01.2011.

Krastel, S.: Lehre im Rahmen GESEP-School, Münster, 16-17.03.2011

Krastel, S.: Short course 'Seismic and acoustic imaging of sedimentary structures including hydrocarbon exploration and geohazard evaluation, Montevideo, Uruguay, 21.-24.11.2011.

Krastel, S.: Short course 'Submarine Mapping (Techniques and Exercises)', Kasetsart University, Bangkok, Thailand, 22.-26.08.2011

Latif, M.: *Ocean and Climate*. Physics of the Ocean. DPG - School, Physikzentrum Bad Honnef, 14.09.2011.

Soria-Dengg, S.: Sommerschule Wissenschaftskommunikation - Meeresforschung verstehen und weitersagen, JuniorAkademie Schleswig-Holstein und Hamburg, St. Peter-Ording, 03.-16.07.2011.

Spielhagen, R.F.: Arctic Marine Geology: Arctic Ocean's sediments, paleoceanography and role in global climate evolution, The University Centre in Svalbard (UNIS), Longyearbyen, Norway, 26.-30.09.2011

Sabbaticals:

Devey, C., November 2010 – October 2011, WHOI, USA

8.2 Teaching at Christian-Albrechts-Universität zu Kiel

Please note: This is an extract of the official course listing of the Christian-Albrechts-Universität zu Kiel. Only contributions by IFM-GEOMAR staff are listed.

W I N T E R - T E R M 2010/2011

Research Division 1: Ocean Circulation and Climate Dynamics

["North Atlantic Decadal Climate variability" Emmy-Noether-Arbeitsgruppentreffen,](#)

[Advanced Meteorological Seminar: „Atmosphere Cryosphere Interactions“, S; 2 SWS](#)

[Advanced Physical Oceanography: Thermohaline Circulation \(MNF-ozgr-301a\), V; 2 SWS](#)

[Angewandte Programmierübungen UNIX/Fortran/Matlab \(für Haupt- und Nebenfächler\), UE; 2 SWS;](#)

[Angewandte Synoptik, V; 2 SWS](#)

[Angewandte Synoptik, UE; 2 SWS](#)

[Anleitung zu selbständigem wissenschaftlichen Arbeiten, AW](#)

[Atmosphären und Ozean Dynamik II, V; 2 SWS](#)

[Übungen zur Vorlesung: Atmosphären und Ozean Dynamik II, UE; 2 SWS](#)

[Geophysical Fluid Dynamics I Fundamentals, V; 2 SWS](#)

[Geophysical Fluid Dynamics II Waves, Instabilities, Energetics, V; 2 SWS](#)

[Geophysical Fluid Dynamics I & II, UE; 2 SWS](#)

[Feedbacks in the Climate System, V; 2 SWS](#)

[Feedbacks in the Climate System, UE; 1 SWS](#)

[Einführung in die Erdöl- und Erdgasgeologie, V; 2 SWS](#)

[Einführung in die Meteorologie, V; 3 SWS](#)

[FB1-Seminar, S;](#)

[Literaturseminar der Meteorologie, Ozeanographie, Geophysik, S; 2 SWS](#)

[Keenlyside, N.S.](#)

[Martin, Th., Toohey, M., Maraun, D.](#)

[Brandt, P., Greatbatch, R.,](#)

[Kanzow, T., Scheinert, M.](#)

[Bumke, K., Martin, Th.](#)

[Bumke, K., Martin, Th.](#)

[Latif, M., Macke, A., Dommenges, D., Krüger, K.](#)

[Böning, C.](#)

[Bjastoch, A.](#)

[Greatbatch, R.](#)

[Latif, M.](#)

[Lübbecke, J.](#)

[Oschlies, A.](#)

[Flöter, J.](#)

[Dullo, W.-Ch.](#)

[Krüger, K.](#)

[Böning, C., Dullo, W.-Ch., Frank, M., Latif, M., Nürnberg, D., Visbeck, M., Brandt, P., Krüger, K., Greatbatch, R.](#)

[Brandt, P., Krüger, K., Martin, Th., Rabbel, W.](#)

[Meereswissenschaftliches Kolloquium](#), KO

[Modern Aspects in Oceanography I: „Tropical Ocean Dynamics: Processes and Role in Climate Variability“](#), V; 2 SWS

[Modern Aspects in Oceanography I: „Tropical Ocean Dynamics: Processes and Role in Climate Variability“](#), S; 1 SWS

[Modern Aspects in Meteorology I: "Tropical Meteorology"](#), V, 2 SWS

[Modern Aspects in Meteorology I: „Tropical Meteorology“](#), UE, 2 SWS

[Regionale Ozeanographie](#), V; 2 SWS

[Regionale Ozeanographie](#), UE; 2 SWS

[Seminar für Diplomanden der Meteorologie](#), S; 2 SWS

[Seminar für Diplomanden der Physikalischen Ozeanographie](#), S; 2 SWS

[Seminar für Diplomanden und Doktoranden: Aktuelle Forschungsergebnisse der marinen Geologie](#), S; 1 SWS

[Seminar für Doktoranden der Physikalischen Ozeanographie](#), S; 2 SWS

[Seminar: Fortschritte der Karbonatsedimentologie für Diplomanden und Doktoranden](#), S; 2 SWS

[Trace Metals in Sea Water \(MNF-mgeo-CP\)](#), S; 2 SWS

Research Division 2: Marine Biogeochemistry

[Advanced Biological Modelling](#), V/UE; 2 SWS

[Allgemeine Meereschemie I](#), V; 2 SWS

[Biogeochemistry of Marine Sediments II](#), V; 1 SWS

[Current Topics in Marine Biogeochemistry II](#), V/UE; 3 SWS

[Current Topics in Marine Biogeochemistry II](#), S; 2 SWS

[Doing Science](#), V; 1 SWS

[Doing Science](#), UE; 2 SWS

Professoren und Dozenten des IFM-GEOMAR

[Brandt, P.](#), [Dengler, M.](#)

[Brandt, P.](#), [Dengler, M.](#)

[Keenlyside, N.S.](#), [Latif, M.](#), [Krüger, K.](#), [Tegtmeier, S.](#), [Maraun, D.](#)

[Keenlyside, N.S.](#), [Latif, M.](#), [Krüger, K.](#), [Tegtmeier, S.](#), [Maraun, D.](#)

[Visbeck, M.](#)

[Kanzow, T.](#), [Karstensen, J.](#)

[Krüger, K.](#)

[Böning, C.](#), [Visbeck, M.](#), [Brandt, P.](#)

[Frank, M.](#)

[Böning, C.](#), [Visbeck, M.](#), [Brandt, P.](#)

[Dullo, W.-Ch.](#), [Frank, M.](#)

[Frank, M.](#)

[Oschlies, A.](#), [Pahlow, M.](#)

[Wallace, D.W.R.](#)

[Treude, T.](#)

[Riebesell, U.](#)

[Riebesell, U.](#), [Körtzinger, A.](#)

[Wahl, M.](#), [Wallace, D.W.R.](#), [Lenz, M.](#), [Werner, I.](#)

[Wahl, M.](#), [Wallace, D.W.R.](#), [Lenz, M.](#), [Werner, I.](#)

Appendices

[Early Earth Life, Extreme Environments and Astrobiology](#), S; 3 SWS

[Einführung in die marine Geochemie I](#), V; 2 SWS

[Introduction to Biological Oceanography](#), V; 3 SWS

[Introduction to Chemical Oceanography](#), V; 2 SWS

[Introduction to Chemical Oceanography](#), UE; 1 SWS

[Klimarelevante Spurengase im Ozean](#), V; 2 SWS

[Marine Animal Physiology](#), V; 2 SWS

[Mechanisms of biomineralization](#), 2 SWS

[Marine Biogeochemie](#), V/UE; 4 SWS

[Meereschemie und Chemische Ozeanographie - Teil II](#), V; 2,5 SWS

[Meereschemisches Praktikum I mit Seminar](#), P/SEM; 4 SWS

[Meereschemisches Praktikum II und Seminar](#), P/SEM; 4 SWS

[Multidisciplinary Oceanographic Research](#), 8 SWS

[Phytoplankton: from genome to ecology](#), V; 2 SWS

[Seminar Biogeochemische Modellierung](#), S; 2 SWS

[Seminar Biogeochemische Modellierung](#), S; 2 SWS;

[Übungen zur Vorlesung Allgemeine Meereschemie I](#), UE; 1 SWS;

[Treude, T.](#)

[Wallmann, K.](#)

[Imhoff, J.F.](#), [Riebesell, U.](#), [Sommer, U.](#), [Wahl, M.](#), [LaRoche, J.](#), [Garthe, S.](#), [Aberle, N.](#), [Weinberger, F.](#), [Reusch, Th.B.H.](#), [Reijnders, P.](#), [Treude, T.](#)

[Wallace, D.W.R.](#)

[Wallace, D.W.R.](#), [Croot, P.](#)

[Bange, H.](#)

[Melzner, F.](#)

[Melzner, F.](#)

[Wallmann, K.](#), [Haeckel, M.](#), [Sommer, S.](#), [Hensen, Ch.](#), [Dale, A.](#)

[Körtzinger, A.](#)

[Bange, H.](#)

[Croot, P.](#), [Bange, H.](#), [Körtzinger, A.](#), [Wallace, D.W.R.](#), [Tanhua, T.](#), [Quack, B.](#)

[Riebesell, U.](#), [LaRoche, J.](#), [Antia, A.](#), [Wahl, M.](#), [Reusch, Th.B.H.](#), [Sommer, U.](#)

[LaRoche, J.](#)

[Oschlies, A.](#)

[Oschlies, A.](#)

[Wallace, D.W.R.](#), [Bange, H.](#)

Research Division 3: Marine Ecology

[Biodiversity of Fishes](#), V/UE; 2 SWS

[Current Topics in Fish Ecology](#), S; 2 SWS

[Current Topics in Marine Ecology II](#), S; 2 SWS

[Current Topics in Marine Ecology II](#), V/UE; 3 SWS

[Einführung in die Meeresbiologie](#), V; 2 SWS

[Fish Systematic, Biology and Evolution](#), V; 1 SWS

[Introduction to Biological Oceanography](#), V; 3 SWS

[Multidisciplinary Oceanographic Research](#), 8 SWS

[Practical Course in Biological Oceanography](#), UE; 1 SWS

[Practical Course in Biological Oceanography, Master and Master](#), P; 12 SWS

[Seminar Evolutionsökologie Mariner Fische](#), S; 1 SWS

[Seminar für Diplomanden und Doktoranden](#), S; 2 SWS

[Seminar für Marine Mikrobiologie](#), S; 2 SWS

[Froese, R.](#)

[Reusch, Th.B.H., Eizaguirre, Ch.](#)

[Sommer, U., Javidpour, J., Matthiessen, B., Molinero, J.C., Wahl, M., Weinberger, F.](#)

[Javidpour, J., Matthiessen, B., Molinero, J.C., Sommer, U., Wahl, M., Weinberger, F.](#)

[Sommer, U., Imhoff, J.F., Wahl, M., Riebesell, U., Reusch, Th.B.H.](#)

[Hanel, R.](#)

[Imhoff, J.F., Riebesell, U., Sommer, U., Wahl, M., LaRoche, J., Garthe, S., Aberle, N., Weinberger, F., Reusch, Th.B.H., Reijnders, P., Treude, T.](#)

[Riebesell, U., LaRoche, J., Antia, A., Wahl, M., Reusch, Th.B.H., Sommer, U.](#)

[Piatkowski, U., Sommer, U., Wahl, M., Rumohr, H., Spindler, M., Schiel, S., Reijnders, P., Hanel, R., Reusch, Th.B.H., von Bröckel, K., Oschlies, A., Melzner, F., Antia, A., Clemmesen-Bockelmann, C., Froese, R., Aberle, N., Matthiessen, B., Molinero, J.C.](#)

[Piatkowski, U., Sommer, U., Wahl, M., Rumohr, H., Spindler, M., Schiel, S., Reijnders, P., Hanel, R., Reusch, Th.B.H., von Bröckel, K., Oschlies, A., Melzner, F., Antia, A., Clemmesen-Bockelmann, C., Froese, R., Aberle, N., Matthiessen, B., Molinero, J.C.](#)

[Reusch, Th.B.H., Eizaguirre, Ch.](#)

[Imhoff, J.F.](#)

[Imhoff, J.F.](#)

Appendices

Research Division 4: Dynamics of the Ocean Floor

[Aktuelle Forschungsthemen in der Marinen Geodynamik](#), S; 2 SWS
[Akustische Abbildung von sedimentären Strukturen im Ozean](#), V; 4 SWS
[Einführung in die Sedimentbecken-Modellierung](#), V/UE; 4 SWS
[Einführung in die Geochemie der Gesteine](#), V; 2 SWS
[Einführung in die Geophysik I](#), V; 2 SWS
[Einführung in die Tektonik/ Strukturgeologie](#), V; 2 SWS
[Magmatismus der Erde mit mikroskopischen Übungen](#), V; 3 SWS
[Petrologie und Hydrothermalismus der Ozeankruste](#), V/UE; 2 SWS
[Magmatische Prozesse und Plattentektonik](#), V; 1 SWS
Marine Resources, V/UE; 3 SWS
Petroleumgeophysik, V, 4 SWS
Petrologisch-Geochemisches Seminar, S: 2 SWS
[Schmelzeinschlüsse in magmatischen Mineralen](#), S

[Behrmann, J.H., Kopp, H.](#)
[Krastel-Gudegast, S.](#)
[Rüpke, L.](#)
[Hansteen, Th., Hauff, F.](#)
[Kopp, H.](#)
[Behrmann, J.H.](#)
[Hansteen, Th., Halama, R.](#)
[Devey, C.W., Lackschewitz, K., Petersen, S.](#)
[Hoernle, K.](#)
[Petersen, S.](#)
[Berndt, Ch., Kopp, H., Jegen-Kulcsar, M.](#)
Hoernle, K.
[Hansteen, Th.](#)

S U M M E R - T E R M 2011

Research Division 1: Ocean Circulation and Climate Dynamics

[Atmosphären und Ozean Dynamik I](#), V; 2 SWS
[Übungen zur Vorlesung: Atmosphären und Ozean Dynamik I](#), UE; 2 SWS
[Data Analysis](#), V; 2 SWS
[Data Analysis](#), UE; 2 SWS
[FB1-Seminar](#), S
[Feldpraktikum Messmethoden der Meteorologie](#), P; 3 SWS

[Böning, C.](#)
[Biastoch, A.](#)
[Maraun D.](#)
[Maraun D.](#)
[Böning, C., Dullo, W.-Ch., Frank, M., Latif, M., Nürnberg, D., Visbeck, M., Brandt, P., Krüger, K., Maraun, D.](#)
[Bumke, K., Stick, C.](#)

[Feldpraktikum Messmethoden der Ozeanographie](#), P; 3 SWS

[Mikrofossilien als Proxies für Klima und Umwelt](#), V; 1 SWS

[Geologie der Albula Querzone: Stratigraphie und Tektonik zwischen Unter- und Oberostalpin](#), EX;

[Introduction to Physical Oceanography](#), V; 3 SWS

[Klima Physik](#), V; 2 SWS

[Klima Physik](#), UE; 2 SWS

[Meereswissenschaftliches Kolloquium](#), KO;

[Messmethoden der Ozeanographie](#), V;

[Messmethoden Meteorologie](#), V; 2 SWS

[Modern Aspects in Oceanography IV](#), V; 2 SWS

[Modern Aspects in Oceanography IV](#), UE; 1 SWS

[Oz.-Met. Climate Seminar](#), S; 2 SWS;

[Ozeanphysik Übung](#), UE; 2 SWS

[Ozeanphysik Vorlesung](#), V; 2 SWS

[Regional Climate Variability](#), V; 2 SWS

[Regional Climate Variability](#), UE; 1 SWS

[Petroleum Geology / Erdölgeologie](#), V, 2 SWS

[Seminar für Diplomanden der Meteorologie](#), S; 2 SWS

[Seminar für Diplomanden der Physikalischen Ozeanographie](#), S

[Seminar für Diplomanden, Doktoranden und Masterstudenten: Aktuelle Forschungsergebnisse der marinen Geologie](#), S; 1 SWS

[Seminar für Doktoranden der Physikalischen Ozeanographie](#), S; 2 SWS

[Seminar IIIa: Karbonatsedimentologie für Diplomanden und Doktoranden](#)

[Stratigraphische Methoden in der Isotopengeochemie](#), V; 2 SWS

[Trace Metals in Sea Water](#), S; 2 SWS

[Karstensen, J.](#)

[Nürnberg, D.](#)

[Dullo, W.-Ch.](#)

[Visbeck, M.](#), [Greatbatch, R.](#)

[Latif, M.](#)

[Martin, Th.](#)

Professoren und Dozenten des IFM-GEOMAR

[Kanzow, T.](#), [Brandt, P.](#), [Visbeck, M.](#), [Fischer, J.](#), [Dengler, M.](#)

[Bumke, K.](#)

[Greatbatch, R.](#)

[Greatbatch, R.](#)

[Krüger, K.](#), [Böning, C.](#)

[Dengler, M.](#), [Karstensen, J.](#)

[Brandt, P.](#)

[Visbeck, M.](#)

[Kanzow, T.](#)

[Dullo, W.-C.](#)

[Krüger, K.](#), [Maraun, D.](#)

[Böning, C.](#), [Visbeck, M.](#), [Brandt, P.](#)

[Frank, M.](#)

[Böning, C.](#), [Visbeck, M.](#), [Brandt, P.](#)

[Dullo, W.-C.](#), [Frank, M.](#)

[Frank, M.](#)

[Frank, M.](#)

Appendices

Research Division 2: Marine Biogeochemistry

[Aktuelle Themen der Meereschemie](#), S; 1 SWS

[Allgemeine Meereschemie II](#), V; 2 SWS

[Anleitung zum selbständigen wissenschaftlichen Arbeiten](#), AW

[Biogeochemistry of Marine Sediments I](#), V; 2 SWS

[Biological Modelling and Biostatistics, Part A](#), V/UE; 4 SWS

[Biological Modelling and Biostatistics, Part B](#), V/UE; 4 SWS

[Current Topics in Marine Biogeochemistry I](#), V; 2 SWS

[Current Topics in Marine Biogeochemistry I](#), S; 2 SWS

[Einführung in die marine Geochemie II](#), V

[How to Write and Publish a Scientific Paper](#), S; 1 SWS

[Marines Seminar](#), S; 1 SWS

[Marine Animal Physiology I - Fascinating New Research Topics in Marine Animal Physiology](#), S; 2 SWS

[Meereschemie und Chemische Ozeanographie Teil I](#), V; 2,5 SWS

[Meereschemisches Praktikum I mit Seminar](#), P/SEM; 4 SWS

[Meereschemisches Praktikum II und Seminar](#), P/SEM; 4 SWS

[Advanced Course in Biological Oceanography, Practical Part B2 \(Pelagic Biogeochemistry\)](#), P; 5 SWS

[Seminar Biogeochemische Modellierung](#), S; 2 SWS

[Stoffkreisläufe im Meer](#), V; 2 SWS

[Übungen zur Vorlesung Allgemeine Meereschemie II](#), UE; 1 SWS

[Wallace, D.W.R., Körtzinger, A.](#)

[Wallace, D.W.R.](#)

[Wallace, D.W.R., Körtzinger, A., Bange, H.](#)

[Treude, T.](#)

[Oschlies, A.](#)

[Lenz, M.](#)

[Riebesell, U., Körtzinger, A.](#)

[Riebesell, U., Körtzinger, A.](#)

[Wallmann, K.](#)

[Treude, T.](#)

[Schwark, L., Stattegger, K., Schrottke, K., Frank, M., Wallmann, K.](#)

[Melzner, F.](#)

[Körtzinger, A.](#)

[Bange, H.](#)

[Tanhua, T.](#)

[Riebesell, U.](#)

[Oschlies, A.](#)

[Bange, H.](#)

[Wallace, D.W.R.](#)

Research Division 3: Marine Ecology

[Advanced Course in Biological Oceanography](#), V; 3 SWS

[Advanced Course in Biological Oceanography, Practical Part A1](#), P; 5 SWS

[Advanced Course in Biological Oceanography, Practical Part A2](#), P

[Advanced Course in Biological Oceanography, Practical Part B1](#), P; 5 SWS

[Advanced Course in Biological Oceanography, Practical Part C](#), P; 5 SWS

[Bestimmungskurs an Meeres- Fauna und Flora \(Ergänzungsveranstaltung\)](#), P; 4 SWS

[Einführung in die Meeresbiologie](#), EX; 2 SWS

[Current Topics in Marine Ecology I](#), S; 2 SWS

[Current Topics in Marine Ecology I](#), V; 3 SWS;

[Sea Bird Ecology MNF-bioc-264 Special Course](#), P; 4 SWS

[Seminar der Marinen und Molekularen Mikrobiologie](#), S; 2 SWS

[Seminar Evolutionsökologie Mariner Fische](#), S; 1 SWS

[Sommer, U., Imhoff, J.F., Riebesell, U., LaRoche, J., Reusch, Th.B.H., Weinberger, F., Piepenburg, D., Garthe, S., Siebert, U., Wahl, M., Eizaguirre, Ch., Treude, T., Wegner, M., Winder, M.](#)

[Reusch, Th.B.H., Melzner, F., Weinberger, F., Eizaguirre, Ch., Roth, O.](#)

[Wahl, M., Weinberger, F.](#)

[Sommer, U., Winder, M., Javidpour, J.](#)

[Süling, J., Imhoff, J.F., LaRoche, J.](#)

[Wahl, M., Rumohr, H., Schütt, R.](#)

[Sommer, U., Imhoff, J.F., Wahl, M., Riebesell, U., Reusch, Th.B.H.](#)

[Sommer, U., Wahl, M.](#)

[Sommer, U., Wahl, M.](#)

[Garthe, S.](#)

[Imhoff, J.F.](#)

[Reusch, Th.B.H., Eizaguirre, Ch., Wegner, M.](#)

[Behrmann, J.H., Kopp, H.](#)

[Krastel-Gudegast, S.](#)

[Rüpke, L.](#)

[Berndt, Ch., Krastel-Gudegast, S., Thorwart, M.](#)

[Hoernle, K.](#)

[Berndt, Ch., Grevemeyer, I.](#)

[Freundt, A., Kutterolf, S.](#)

Research Division 4: Dynamics of the Ocean Floor

[Aktuelle Forschungsthemen in der Marinen Geodynamik](#), S; 2 SWS

[Digitale Bearbeitung geophysikalischer Daten: Seismische Interpretation](#), V/UE; 2 SWS

[Finite element modeling of convection in porous media](#), V/UE; 3 SWS

[Geophysikalische Feld- oder Seemessungen \(Feldmessungen\)](#), P; 6 SWS

[Magmatische Prozesse und Plattentektonik](#), V; 2 SWS

[Marine Geophysik](#), V/UE; 4 SWS

[Physische Vulkanologie](#), V/UE; 2 SWS

9. Acronyms

AABW	Antarctic Bottom Water	BASIC	Baltic Sea cyanobacteria	CGCM	Coupled General Circulation Model
AAIW	Antarctic Intermediate Water	BASYS	Baltic Sea System Study	CIESM	Commission internationale pour l'exploration scientifique de la mer Méditerranée
AARI	Institut für Arktis- und Antarktisforschung St. Petersburg/Russia	BATS	Bermuda Atlantic Time series Study		
		BECAUSE	Critical Interactions BETWEEN Species and their Implications for a PreCAUTIONary	CIMAS	Cooperative Institute for Marine and Atmospheric Studies, Miami, USA
ACC	Antarctic Circumpolar Current			CIRAMOS	Compilation of regional cirrus macro- and microphysical properties
ACME	Advisory Committee for the Environment	BEQUALM	Biological effects quality assurance in monitoring programmes	CLIVAR	Climate Variability and Predictability Programme (WCRP)
ACSYS	Arctic Climate System Study	BfA	Bundesforschungsanstalt für Fischerei	CLIWA-Net	Cloud Liquid Water Network (BALTEX)
ADCP	Acoustic Doppler Current Profiler	BfN	Bundesamt für Naturschutz	CNRM	Centre National de Recherches Meteorologiques
AGCM	Atmospheric General Circulation Model	BGR	Bundesanstalt für Geowissenschaften und Rohstoffe	CMS	Commission on Moving Species
AGU	American Geophysical Union			CMCC	Euro-Mediterranean Centre for Climate Change
AMAM	Automated nutrient analysis	BIO	Bedford Institute for Oceanography	COADS	Comprehensive Ocean-Atmosphere Data Set
AMMA	African Monsoon Multidisciplinary Analyses	BioCoMBE	The Impact of Biodiversity Changes in Coastal Marine Benthic Ecosystems	CoML	Census of Marine Life
AMOC	Atlantic Meridional Overturning Circulation	BMBF	Bundesministerium für Bildung und Forschung	COMWEB	Comparative analysis on coastal planktonic food webs
AMS	American Meteorological Society	BMVEL	Bundesministerium für Verbraucherschutz, Ernährung und Landwirtschaft	CRCES	Center for Research on the Changing Earth System
AMSU	Advanced Microwave Sounding Unit			CRIMP	Center of Research on Marine Introduced Pests (Australia)
ANIMATE	Atlantic Network of Interdisciplinary Moorings and Timeseries for Europe	BSH	Bundesanstalt für Seeschifffahrt und Hydrographie	CSIRO	Commonwealth Scientific & Industrial Research Organisation (Australia)
AOSB	Arctic Ocean Sciences Board	BSR	Bottom-Simulating-Reflector	CTD	Conductivity-Temperature-Depth
APEX	Arctic Paleoclimate and its Extremes	BSSC	Building Seismic Safety Council	DACH	Deutsch-Österreichisch-Schweizerische Meteorologentagung
ART	Arctic in Rapid Transition Initiative	CACGP	Commission for Atmospheric Chemistry and Global Pollution	DCESS	Danish Centre for Earth System Science
ASFA	Aquatic Sciences and Fisheries Abstracts			DFG	Deutsche Forschungsgemeinschaft (German Research Council)
ASLO	American Society of Limnology and Oceanography	CARINA	Carbon dioxide in the Atlantic Ocean	DGG	Deutsche Geologische Gesellschaft
AtlantNIRO	Atlantic Scientific Research Institute of Marine Fisheries and Oceanography, Russia, Kaliningrad, Russia	CAU	Christian-Albrechts-Universität zu Kiel	DGHM	Deutsche Gesellschaft für Hygiene und Mikrobiologie
		CAVA	Central American Volcanic Arc	DGL	Deutsche Gesellschaft für Limnologie
AUV	Autonomous Underwater Vehicle	CAVASSOO	Carbon variability studies by ships of opportunity	DGM	Deutsche Gesellschaft für Meeresforschung
AVHRR	Advanced Very High Resolution Radiometer	CCCC	Climate Change and Carrying Capacity		
AWI	Alfred Wegener Institut für Polar- und Meeresforschung, Bremerhaven	CCMVal	Chemistry-Climate Model Validation		
BAHC	Biospheric Aspects of the Hydrological Cycle (IGBP)	CCRC	Climate Change Research Centre		
BALTEX	Baltic Sea Experiment	CDIAC	Carbon Dioxide Information Analysis Center, Oak Ridge, USA		
BALTIMOS	BALTEX - Integral Model System	CEFAS	Centre for Environment, Fisheries and Aquaculture Science, Lowestoft, UK		
		CFCAS	Canadian Foundation for Climate and Atmospheric Sciences (CDN)		

DGP	Deutsche Gesellschaft für Protozoology	ENSO	El Niño/La Niña-Southern Oscillation		Geesthacht)
DIFRES	Danish Institute for Fisheries Research, Lyngby, Denmark	ERA-40	ECMWF 40 Year Re-analysis	GLOBEC	Global Ocean Ecosystems Dynamics
DIGENIT	Diversität nitratreduzierender Bakterien (BMBF Project)	ESF	European Science Foundation	GMES	Global Monitoring for Environment and Security
DIVA	Latitudinal gradients of deep-sea bioDiversity in the Atlantic Ocean	ESONET	European Sea Floor Observatory Network	GOOS	Global Ocean Observing System
DLR	Deutsche Gesellschaft für Luft- und Raumfahrt	ESRIN	European Space Research Institute	GPI	Geologisch-Paläontologisches Institut
DMG	Deutsche Meteorologische Gesellschaft	ESTEC	European Space Research and Technology Centre	GRACE/OBP	Gravity Recovery And Climate Experiment
DMS	Dimethyl sulphide	ESTOC	European Station for Time-Series in the Ocean Canary Islands	GSF	Forschungszentrum für Umwelt und Gesundheit (BMBF Projektträger)
DMSP	dimethyl sulfonium propionate	ETA AAS	Atomic Absorption Spectroscopy using Electrothermal Atomisation	GSOP	Global Synthesis and Observations Panel
DOMINOE	Dissolved organic matter as a component of ocean ecosystem and carbon cycle	EU	European Union	GV	Geologische Vereinigung
DON	Dissolved organic nitrogen	EUAC	European Union of Aquarium Curators	HELCOM	Helsinki Commission (Baltic Marine Environment Protection Commission)
DPG	Differential Pressure Gauge	EUC	Equatorial Undercurrent	HERSUR	Herring Survey Programme (EU)
DWBC	Deep Western Boundary Current	EULIT	Effects of eutrophicated seawater on rocky shore ecosystems studied in large littoral mesocosms	HYDROARC	Hydrothermale Prozesse an flach-marinen Vulkanen der Bransfield Strasse
DWD	Deutscher Wetterdienst	EURASLIC	European Association of Aquatic Libraries and Information Centres	HYFIFLUX	Hydrothermal fluid development, material balancing and special biological activity in the North Fiji Basin
DWK	Deutsche Wissenschaftliche Kommission für Meeresforschung	FB	Forschungsbereich	IABO	International Association for Biological Oceanography
DYNAMO	Dynamics of North Atlantic Models	FEB RAS	Far Eastern Branch of the Russian Academy of Sciences	IACS	International Association for the Cryospheric Sciences
EARSeL	European Association of Remote Sensing Laboratories	FEOM	Finite-Elemente Ocean Model	IAMAP	International Association of Meteorology and Atmospheric Physics
EAS	European Aquaculture Society	FLAME	Family of Linked Atlantic Model Experiments	IAMAS	International Association of Meteorology and Atmospheric Sciences
EASIZ	Ecology of the Antarctic Sea Ice Zone	FTZ	Forschungs- und Technologiezentrum der CAU, Büsum	IAPP	International Arctic Polynya Programme (AOSB; IAPP)
ECCO	Estimating the Circulation of the Ocean	GAME	Global Approach by Modular Experiments	IAP RAS	Institute of Applied Physics of the Russian Academy of Sciences
ECHAM /NEMO	European Centre Hamburg Model / Nucleus for European Modelling of the Ocean	GBB	Great Bahama Bank	IAPSO	International Association for the Physical Science of the Oceans
ECMWF	European Centre for Medium Range Weather Forecasts	GBIF	Global Biodiversity Information Facility	IASC	International Arctic Science Committee
ECOSIM	Ecosystem Simulation	GCMs	General Circulation Models	IBM	Individual-based models
EEA	European Elasmobranch Association	GeoB	Institut für Geowissenschaften, Univ. Bremen	ICARP	International Conference on Arctic Research Planning
EGO	European Glider Observatories	GEWEX	Global Energy and Water Cycle Experiment	ICBM	Institut für Chemie und Biologie des Meeres, Universität Oldenburg
EGU	European Geosciences Union	GfÖ	Gesellschaft für Ökologie	ICBS	International Committee on
EIFAC	European Inland Fisheries Advisory Commission	GFZ	Geoforschungszentrum Potsdam		
ELOISE	European Land Ocean Interaction Analysis	GHSZ	Gas Hydrate Stability Zone German Israel Foundation		
EMAPS	European Marine and Polar Sciences	GITEWS	German-Indonesian Tsunami Early Warning Sytem		
EMBS	European Marine Biology Symposium	GKSS	Gesellschaft für Kernenergieverwertung in Schiffbau und Schifffahrt (Forschungszentrum		
ENBI	European Network of Biodiversity Information				

Appendices

ICCM	Systematic Bacteriology Instituto Canario de Ciencias Marinas, Las Palmas, Spain	IUB	International University Bremen	NAO	North Atlantic Oscillation
ICES	International Council for the Exploration of the Seas	IUGG	International Union of Geodesy and Geophysics	NATO	North Atlantic Treaty Organization
ICHCA	International Cargo Handling Co- ordination Association	KALMAR	Kurile-Kamchatka and Aleutian Marginal Sea-Island Arc Systems	NBUC	North Brazil Undercurrent
IEO	Instituto Español de Oceanografía	KAUST	King Abdullah University of Science and Technology	NCAR	National Center for Atmospheric Research, Boulder, USA
IfM	Institut für Meereskunde, Hamburg	KCM	Kiel Climate Model	NCEP	National Center for Environmental Prediction (NOAA)
IFREMER	Institut Français de Recherche pour l'Exploitation de la Mer, Brest, France	KDM	Konsortium Deutsche Meeresforschung	NEMO	Nucleus for European Modelling of the Ocean
IFT	Leibniz-Institut für Troposphärenforschung	KNMI	Koninklijk Nederlands Meteorologisch Instituut, de Bilt, The Netherlands	NERC	National Environmental Research Council
IGBP	International Geosphere-Biosphere Programme	KOFST	Korean Federation of Science and Technology Societies	NEUC/SEUC	North Equatorial Undercurrent / South Equatorial Undercurrent
IGOOS	IOC-WMO-UNEP Committee for GOOS	LATFRI	Latvian Fisheries Research Institute	NIOZ	Nederlandse Instituut voor Onderzoek der Zee, The Netherlands
IHLS	International Herring Larvae Survey (ICES)	LIP	Large Igneous Provinces	NIWA	National Institute of Water and Atmospheric Research (NZ)
IMAU	Institut für Marine and Atmospheric Research Utrecht, The Netherlands	LOICZ	Land Ocean Interactions in the Coastal Zone (IGBP component)	NOAA	National Oceanic and Atmospheric Administration
IMO	International Maritime Organization	LSW	Labrador Sea Water	NOAA-AOML	National Oceanic and Atmospheric Administration – Atlantic
INQUA-Morss	International Union for Quaternary Research-Morss	MACOM	Maternal effects on Atlantic cod recruitment and implications for management strategies (EU Project)		Oceanographic and Meteorological Laboratory, Miami, USA
INTAS	International Association for the promotion of cooperation with scientists from the independent states of the former Soviet Union	MAR	Mid Atlantic Ridge	NOC	National Oceanography Centre, Southampton, UK
Intergovernmental Oceanographic Commission		MAR-ECO	Project Patterns and Processes of the Ecosystem of the Northern Mid- Atlantic	NOCES	Northern Ocean-Atmosphere Carbon Exchange Study
IODP	Integrated Ocean Drilling Program	MARBEF	Marine Biodiversity and Ecosystem Functioning EU Network of Excellence	NOW	Nederlandse Organisatie voor Wetenschappelijk Onderzoek
IOW	Institut für Ostseeforschung, Warnemünde	MARE	Marine Artificial Recirculated Ecosystem	NSERC	National Science and Engineering Research Council (CDN)
IPCC	Intergovernmental Panel on Climate Change	MATER	Mediterranean Targeted Project-Mass Transfer and Ecosystem Response	NSF	National Science Foundation, USA
IPIMAR	Instituto de Investigação das Pescas e do Mar, Lisboa	MCEV	Multidecadal and Centennial ENSO Variability	OBH	Ocean Bottom Hydrophones
IPRC	International Pacific Research Institute, Honolulu, USA	MOC	Meridional Overturning Circulation	OBIS	Ocean Biogeographic Information System
IRCCM	International Research Consortium for Continental Margins	MODOO	Modular Deep Ocean Observatory	OBS	Ocean-Bottom-Seismometers
IRONAGES	Iron Resources and Oceanic Nutrients- Advancement of Global Environment Simulations	MOVE	Meridional Overturning Variability Experiment	OBU	Ocean-Bottom-Unit
ISCCP	International Satellite Cloud Climatology Project	MPIfM	Max-Planck Institut für Meteorologie	OCTOPUS	Ocean Tomography Operational Package and Utilization Support
ITCZ	Intertropical Convergence Zone	MRI	Marine Research Institute, Reykjavik, Iceland	OMAE	Offshore Mechanics and Arctic Engineering
		MSG-IR	Meteosat Second Generation-Infrared	OMEX	Ocean Margin Exchange
		NAC	North Atlantic Current	OPAC	Online Public Access Catalogue
		NADW	North Atlantic Deep Water	ORNL	Oak Ridge National Laboratory, Oak Ridge, USA
		NAFO	Northwest Atlantic Fisheries Organization	OSPAR	Convention for the Protection of the

	Marine Environment of the North-East Atlantic (Oslo-Paris)	SFB	Sonderforschungsbereich (Collaborative Research Center)	WCRP	World Climate Research Programme
PAGES/IMAGES	Past Global Changes/International Marine Global Change Studies	SGMSNS	Study Group on Multispecies Assessments in the North Sea	WDC-MARE	World Data Center for Marine Environmental Data
PAH	Polycyclic Aromatic Hydrocarbons	SIL	Societas Internationalis Limnologiae	WGEIM	Working Group on Environmental Interactions of Aquaculture
PARS	Precision and accuracy of tools in recruitment studies (Eu-Project)	SIO	Scripps Institution of Oceanography, La Jolla, USA	WGL	Wissenschaftsgemeinschaft Gottfried Wilhelm Leibniz
PCB	Polychlorinated biphenyl	SMHI	Swedish Meteorological and Hydrological Institute	WGNE	Working Group on Numerical Experimentation
PDF	Probability Density Function	SAO-NMEFC	State Oceanic Administration - National Marine Environmental Forecasting Center	WGOMD	Working Group on Ocean Model Development
PEP	Pilot Study of Evaporation and Precipitation (BALTEX)	SODA	Simple Ocean Data Assimilation	WGSF	Working Group on Surface Fluxes
PIK	Potsdam Institute für Klimafolgenforschung, Potsdam	SOIREE	Southern Ocean Iron Release Experiment	WHOI	Woods Hole Oceanographic Institution, Woods Hole, USA
PIRATA	Pilot Research Array of moored buoys over the Tropical Atlantic	SOLAS	Surface Ocean Lower Atmosphere Study	WMO	World Meteorological Organization
POC	Particulate Organic Carbon	SOMARE	Sampling, Observations & Modelling of Atlantic Regional Ecosystems	WOAP	WCRP Observations and Assimilation Panel
POGO	Partnership for Observations of the Global Oceans	SOPATRA	South Pacific Paleooceanographic Transects	WOCE	World Ocean Circulation Experiment
POLMARF	Polish Marine Fishery Science Center	SOPRAN	Surface Ocean Processes in the Anthropocene	WTZ	Wissenschaftlich-Technische Zusammenarbeit (BMBF)
PON	Particulate Organic Nitrogen	SPACC	Small Pelagic Fishes and Climate Changes	XBT	Expendable Bathythermograph
PR	Public Relations	SPARC	Stratospheric Processes And their Role in Climate	ZMAW	Zentrum für Marine und Atmosphärische Wissenschaften (Hamburg)
PTJ	Projekträger Jülich (BMBF)	SPP	Special Priority Program (DFG)	ZMK	Zentrum für Meeres- und Klimaforschung der Universität Hamburg
RAS	Russian Academy of Sciences	SRON	Netherlands Institute for Space Research	ZUFO	Zentrum für Umweltforschung
RD	Research Division	SSA	Scientific Support Action		
RECONN	Resolving Trophodynamic Consequences of Climate Change	SSTC	Shallow Subtropical Cell		
RIVO	Nederlands Instituut voor Visserijonderzoek, IJmuiden, The Netherlands	SV	Sverdrup (106 km ³ /s)		
ROV	Remotely Operated Vehicle	TACE/PIRATA	Tropical Atlantic Climate Experiment		
RSMAS	Rosenstiel School of Marine and Atmospheric Sciences, Miami, USA	TAR	Third Assessment Report (IPCC)		
SAB	Scientific Advisory Board	TAV	Tropical Atlantic Variability		
SAGA	South African Geophysical Association	TEWS	Tsunamis Early Warning System		
SAMOC	South Atlantic Meridional Overturning Circulation	THC	Thermohaline Circulation		
SAP	Sustainable Fisheries: Assessment and Prediction (EU project)	THOR	Thermohaline Overturning – at Risk?		
SCAR	Scientific Committee on Antarctic Research	TLC / TLZ	Technology and Logistic Center (Technik- und Logistik Zentrum)		
SCOR	Scientific Committee on Oceanic Research	UBA	Umweltbundesamt		
SDN	Schutzgemeinschaft Deutsche Nordseeküste	VAAM	Vereinigung für Allgemeine und Angewandte Mikrobiologie e.V.		
SETAC	Society of Environmental Toxicology and Chemistry	VOS	Voluntary Observing Ships		
		WAS	World Aquaculture Society		