

## Introduction



Dear congress participant, on behalf of the Organising Committee of the 2<sup>nd</sup> Deep-Water Circulation Congress: The Contourite Log-book, I warmly welcome you to Ghent. During these 3 days, we will be able to offer you 6 exciting keynote lectures, 35 oral and 28 poster presentations, many of which will be presented by PhD students and early career scientists. We are much obliged to the members of the Scientific Committee for their assessment of these contributions, all present here in as extended abstracts in the official congress abstracts book. In total, 266 international

scientists collaborated in the elaboration of all these abstract, covering topical areas all over the globe from shallow to deep (even ultra-deep) water depths. The contourite paradigm has thrived since its beginning in predominantly the Atlantic Realm, but it gradually has moved over to the other oceans and lakes of the world (Fig. 1).

We are also proud that we were successful in continuing the efforts that have been made by the organisers of the first *Deep-Water Circulation Congress: Processes and Products*, organised in Baiona, Spain (16-18 June, 2010). After this (first?) period of 4 years, a major milestone in contourite research was passed with the execution of IODP Expedition 339, drilling the Cádiz Contourite Depositional System (Fig. 2). Also, this first congress has laid the base for a number of topical publications, renewed collaborations, international partnerships and projects of which the results will be presented within the upcoming days. We can only hope that this positive groundswell will continue towards a 3<sup>rd</sup> DWC in 2018.

Moreover, during this year, when the *Marine Geology* journal will celebrate its 50<sup>th</sup> anniversary, we can celebrate as well the first seminal paper on deep-sea currents, published by Heezen and Hollister in the first volume (2<sup>nd</sup> issue) of *Marine Geology*. Since then, a tremendous effort has been realized by numerous marine scientists to be able to better understand the story locked within the contouritic sequences. We are proud to announce that some of the papers presented during this congress will be further elaborated for a special “2DWC” issue of *Marine Geology*.

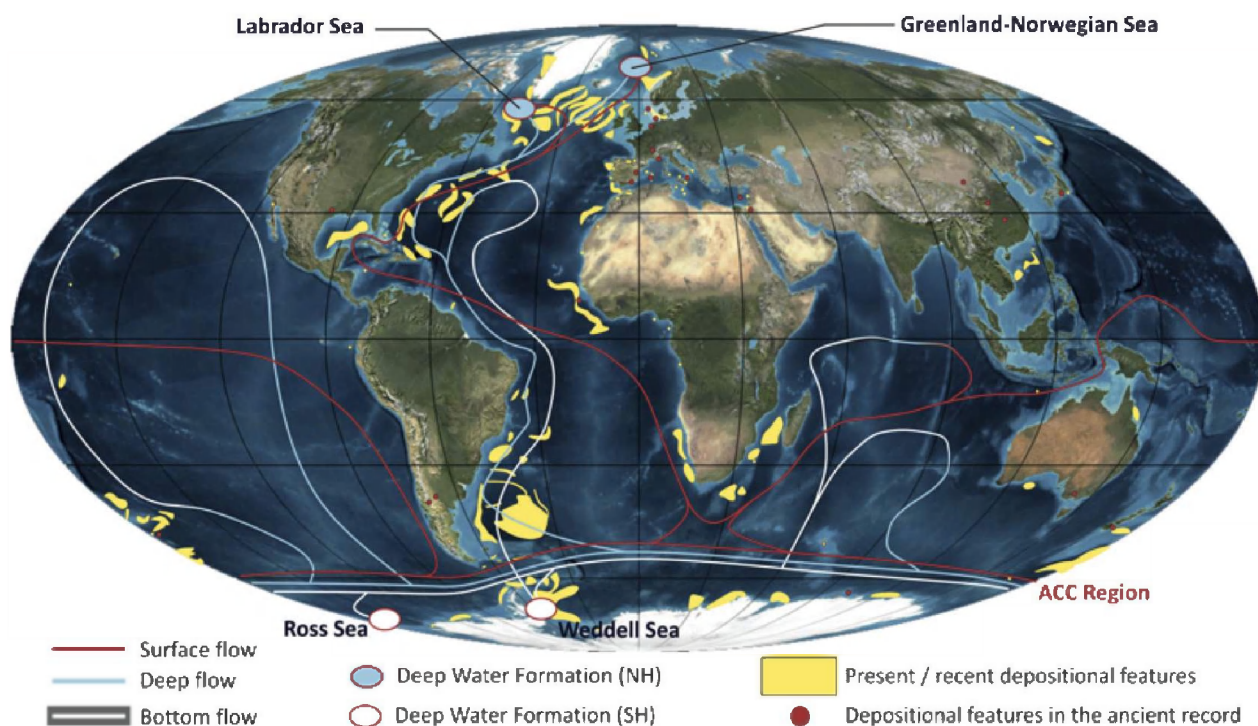


FIGURE 1. Global thermohaline circulation and occurrence of large contourite deposits in the present ocean basins (yellow areas) and in the ancient sedimentary record (black points), Rebesco et al. (2014)

This is why the 2<sup>nd</sup> Deep-Water Circulation Congress aims to focus within these three days on the “*Contourite Log-book*”, with the intention to increase our ability to unveil and extract the temporal and lateral variability of palaeoceanographic processes. Based upon the submitted abstracts, we were able to focus on 4 topical sessions:

**Session 1:** “*The influence of contourite sedimentation on slope (in)stability*”. Contourite deposits play a major role in the stability of continental margins. Especially on high latitudes their lateral and temporal variability may provoke mass movements. Additionally, some sets of diagnostic criteria between downslope and alongslope processes still can be improved. Therefore, this session is co-sponsored by the IGCP-585 E-MARSHAL project.

**Session 2:** “*The coupling between oceanographic processes and contourite sedimentation*”. This session constitutes one of the challenges for future research; to better tie present-day physical oceanographic processes to the contourite deposits, with the aim to better understand past oceanic circulation. Therefore, topics are brought forward ranging between physical oceanographic studies, palaeoceanography on cores and seismic sections, as well as seismic oceanography.

**Session 3:** “*Contourite processes and deep-water ecosystems*”. Contourite processes play a vital role in the initiation, maintenance and decay of deep-water ecosystems. Mostly, but not uniquely, this is related to cold-water coral reefs and mounds, where both systems seem to influence each other. This session is co-sponsored by FWO-ICA COCARDE II and ESF COCARDE-ERN (COld-water CARbonate Reservoir systems in Deep Environments).

**Session 4:** “*Advances in diagnostic criteria of contourite systems*”. This largest session will focus on the advances and methods in (seismic) facies characterization of contourite systems, including shallow-water and lake contourites, as well as their economic relevance within hydrocarbon systems.

On behalf of the 2DWC Organising Committee, I wish you a most interesting and fruitful conference.

Prof. Dr. David Van Rooij  
Chair of the 2DWC congress

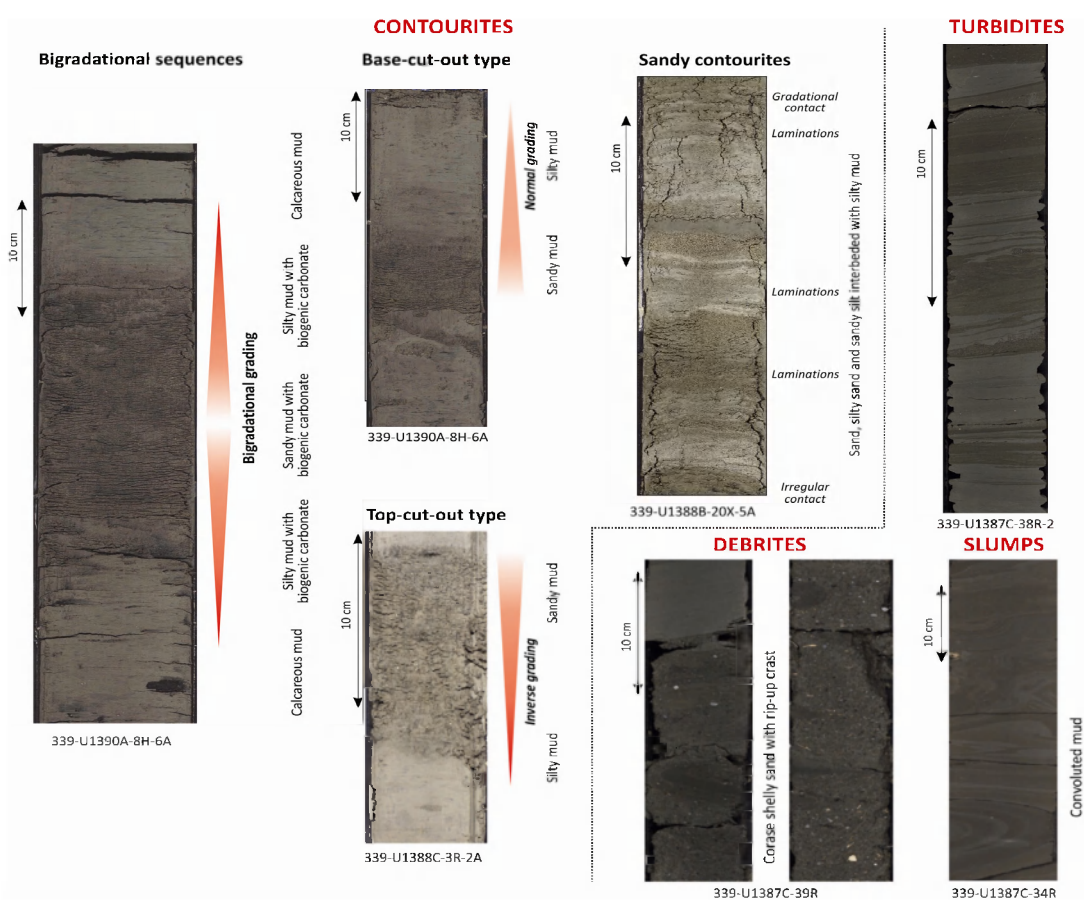


FIGURE 2. Contourites and associated facies, IODP Expedition 339, Gulf of Cadiz (Rebesco et al., 2014)