

/L). Coastal waters, and in particular waters above coralligene habitats, may be important sources of atmospheric DMS/P fluxes with potential influences on local cloud formation and thus local climate.

### **O21- Swimming behaviour in pelagic crustaceans: sleepy krill and climate change.**

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Developing an understanding of the behaviour of pelagic crustaceans can be challenging. They are difficult to observe in the wild without them reacting to the observer and they are generally not comfortable in aquaria. During a summer campaign in Kristineberg Marine Station we developed a new method that allows the researcher to quantify and analyse swimming activities of the Nordic krill (*Meganyctiphanes norvegica*). We demonstrated that there were sex-related and moult stage related differences in behaviour. Subsequent to this we were able to take the technique to sea and apply it to Antarctic krill (*Euphausia superba*). Here we demonstrated that krill suffer from post-prandial narcosis and may sequester more carbon than we previously thought. In our most recent trip to the waters around South Georgia we have developed a new piece of software that allows detailed analysis of swimming behaviour at sea using short term Fourier transform.

### **O22- Capture rates of the Cold Water Coral *Lophelia pertusa* on living phyto and zooplankton under different current speed regimes**

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To determine prey capture rates by the cold water coral (CWC) *Lophelia pertusa*, under conditions designed to simulate the natural environment, feeding experiments have been conducted with colonies of *L. pertusa* from the Mingulay reef complex (Sea of Hebrides, UK). Potential prey items used were a culture of the marine diatom *Skeletonema marinoi* and freshly captured zooplankton. This is the first time feeding trials with *L. pertusa* have been carried out using living algae and naturally-occurring zooplankton as opposed to aquarium-grown prey (e.g. *Artemia salina*) or frozen food material. The experimental apparatus consisted of four circular tanks (three experimental tanks and a control); in each tank current speed was regulated, and in order to test the live prey capture efficiencies, three different current speeds (2 cm.s<sup>-1</sup>, 5 cm.s<sup>-1</sup> and 10 cm.s<sup>-1</sup>) were used for each experiment. Our results shows clear

differences between the three current speeds. *Lophelia* successfully captured algae under 5 cm s<sup>-1</sup> and zooplankton between 2 and 5 cm s<sup>-1</sup> whereas at the higher current speeds both algae and zooplankton capture could not be significantly detected. These results will be discussed in context to the natural environmental conditions of this CWC species.

### **O23- Effects of stressful environmental factors in lagoonal ecosystems on marine microbial and invertebrate populations**

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Lagoons are extreme and dynamic ecosystems characterized by vigorously changing temporal and spatial conditions. Lagoons host a number of important human activities inside and around their limits, and as a result such fragile environments may be subjected to intense stress. Stress responses of benthic populations and bacterial communities were investigated on three different levels: a) Imposex implications of gastropod species were examined, b) Genetic structure of polychaete communities was investigated through process of COI gene and c) Bacterial DNA was analyzed with cultivation-independent approaches to depict the bacterial community composition. The aim of the present study was to elucidate the role of stress factors on the benthic communities of lagoons and to compare responses between lagoonal communities of different geographical areas.

### **O24- Biological effects of xenobiotics on marine organism**

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It has been well established that many environmental contaminations can act as toxicants and marine organism appears to be sensitive to the effects of xenobiotics. Toxicant can compete with metabolism for their nuclear and cellular bindings sites. The molecular and cellular actions of these toxicants have been tested in our laboratory. Tributyltin (TBT) is known to exert toxic effect on herring spermatozoa viability, lactate dehydrogenase activity and cause creatine kinase release from damaged spermatozoa. Cadmium is one of the most harmful heavy metals to animals and is an environmental contaminant in sea water. Cadmium shows strong inhibition of the malic enzyme in herring spermatozoa and could influence viability and motility of spermatozoa in the water of Gdansk Bay, region where herring spawning occurs. Mutagenic effect of some xenobiotics can be tested on marine bacteria *Vibrio harveyi* A16 strain using Ame's mutagenicity test.