

## **THE TROPHODYNAMIC ROLE OF NEMATODE COMMUNITIES IN THE ECOLOGY OF DIFFERENT DEEP-SEA ENVIRONMENTS**

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Photoautotrophs fix carbon dioxide and assimilate inorganic nutrients in the euphotic ocean layer. 10-30% of the converted carbon sinks out of the surface waters, either directly as organic particles or indirectly after being eaten by marine animals. This material undergoes microbial degradation on its way down and serves as food at the bottom. Less than 1% of the fixed carbon during photosynthesis is buried in the deep-sea sediments. In the deep NE-Atlantic, bacteria and protozoa (e.g. flagellates, ciliates and foraminifera) colonise phytodetritus and multiply their standing stock whereas for metazoan meiofauna a corresponding response has not been confirmed. As the meiofauna represents an important and very diverse group of inhabitants of the deep-sea benthos, there is an urge for a better understanding of their trophodynamic role in the ecology of several deep-sea environments.

My PhD study takes part on different projects which have the multidisciplinary approach of studying the abyssal plains and cold seeps, in temperate and polar regions. In the framework of studying the benthic-pelagic coupling my main focus goes out to the functional biodiversity and ecology of the dominant meiofaunal taxon, the Nematoda. During the past year I had the opportunity to join the POLARSTERN on two expeditions, to both polar regions. I did both sampling and experimental (*in situ* and *in vitro*) work which is presented in the poster.