Title

Foraminifera and pteropod biodiversity along biogeochemical gradients

Specialisation

Marine biology, biogeosciences, planktonic calcifiers, biodiversity

Description

Pteropod, a marine snail

The oceans, the largest ecosystem in the world, are home to a variety of planktonic organisms that key players in e. g. the food web and the global carbon cycle. The global carbon cycle is particularly influenced by planktonic calcifiers because they not only change the surface seawater carbonate chemistry and therewith the atmospheric CO_2 concentration, but also export calcium carbonate to the deep sea where a part of this material forms carbonate sediments. Atmospheric CO_2 concentration, however, is not only influenced by marine planktonic calcifiers, but it itself influences these organisms. Anthropogenic CO_2 emissions and associated ocean acidification are a threat to marine calcifiers. One major gap in our knowledge is the relationship between environmental, biogeochemical gradients and biodiversity of planktonic calcifiers. This knowledge is central to our understanding of the environmental constraints that shape calcifying communities. Understanding these constraints in turn is a prerequisite for predicting the fate of these key organisms under climate change.

Foraminifer, a marine calcifying amoeba

This project will therefore **characterize the main factors controlling the distribution** of two important groups of calcifiers, the foraminifera (unicellular calcite producing amoeboid Rhizaria) and the pteropods (aragonite producing sea snails). This question will be addressed by a **meta-analysis of existing literature** including database material such as MAREDAT. The aim is to relate biodiversity contrast to biogeochemical contrast, e. g. in temperature.

Contact: Patrizia Ziveri (Patrizia.Ziveri@uab.cat), Gerald Langer (Gerald.Langer@uab.cat).