

Dear SFB 754 community,

On short notice we would like to invite you for a **special SFB 754 colloquium**.

As you might remember, last year after the SFB754 summer school, three mini-proposals handed in by the SFB754 young scientists were granted.

On Thursday, 17th July, starting at 09:00h, (lecture hall, GEOMAR westshore) the mini-proposal holders will give an update on their granted projects' status, first result and outlook. Each presentation will be max. 30 min.

Jessica Gier (B6), Carolin Löscher (B4):

Diazotrophic diversity in sediments

Information on diazotrophs and N₂ fixation in marine sediments is relatively sparse and can be considered as one major gap in knowledge regarding the marine nitrogen cycle. However, the presence of active N₂ fixation and our preliminary results indicate a largely underestimated diversity of N₂ fixers in marine sediments. Thus, we aim to investigate this diversity by an in-depth high-throughput sequencing analysis of samples collected at several marine locations worldwide. This will provide the first survey of the benthic *nifH* gene pool, which might finally help to understand the marine nitrogen budget.

Manuela Köllner (A3), Rainer Kiko / Helena Hauss (B8):

Tracer loss via sinking marine particles in the tropical North Atlantic OMZ

The goal of this project is to detect if artificial tracer (SF₅CF₃) is lost in significant amounts from the target density via sinking particles in the water column during the Oxygen Supply Tracer Release Experiment (OSTRE). Tracer Release Experiments (TREs) are conducted to estimate mixing rates from the vertical and lateral spreading. The tracer is injected at a defined density and location and its distribution is mapped after several months. An uptake of tracer at or nearby the target density and a later release at much greater density by sinking particles can cause a loss of tracer in the sampled depth/density range and thus, result in an error of estimated mixing rates. We will report on preliminary results of first experiments during M105 conducted to identify the uptake of SF₅CF₃ in marine particles/algae. Further experiments and combining these results with the estimated particle flux-rates for the investigation area derived from Underwater Vision Profiler (UVP) data from the cruises MSM23, M97, and M105, will enable us to quantify the tracer loss. Quantification of the loss of tracer through sinking particles will reduce the uncertainties/error-bars of the Tracer Release Experiment.

Alexandra Marki (B2), Ulrike Lomnitz (B5):

Modelling microbial community composition and controls on benthic-pelagic coupling of the phosphorus cycle in the Peruvian Oxygen Minimum Zone

Recent publications have highlighted the potential of phosphorus (P) storage and release by microorganisms under changing redox conditions. In this study we integrate the benthic and pelagic observational data set (12°S/M92 cruise) into a coupled 1-D water-column/benthic model to provide an auspicious way to define the microbial control in the phosphorus cycle of the Peruvian oxygen minimum zone. Furthermore gene sequencing and taxonomic analysis are performed to identify the bacterial community composition in the water column and sediments.