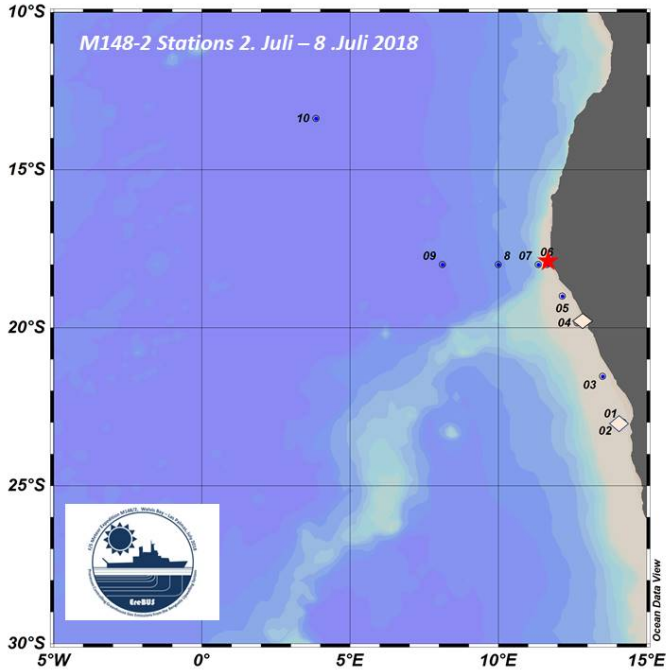
M148/2 „EreBUS“ 01.07.2018 (Walvis Bay, Namibia) - 20.07.2018 (Las Palmas, Spain)

As I write, the R/V Meteor finds itself sailing into the open blue waters of South Atlantic Ocean on a northwest heading. We have a pleasant wind and gentle 1 to 2 meter swells from behind and are making excellent time along our third and last station transect. This stands in contrast to the weather conditions marking our departure from Walvis Bay last Monday for the first station of the EreBUS expedition. We left port shortly after 11 AM and were immediately confronted with high winds and 5 meter wave heights. It proved to be a challenging start for the first main sampling station, but after several hours we were able to meet most of our sampling goals. Only the sediment multi-corer deployment was dropped due to inclement wind and wave conditions. Thereafter, we commenced an extremely busy sampling campaign running northwards along the Namibian shelf, finally reaching our northernmost shelf station on Wednesday, July the 4th. Here, in addition to our standard sampling program, our colleagues from the Institute of Baltic Sea Research Warnemünde (IOW), recovered, serviced and re-deployed a seafloor-moored ADCP unit, used in making continuous current measurements through the water column.

*Recovery of the ADCP mooring at Station M148-206*




*Stations from the first week of sampling activities . White diamonds are where the pump-CTD was deployed. The star indicates the station the mooring was recovered, in addition to a pump-CTD cast.*

Along the continental shelf transect in the Benguela upwelling region, hydrographic and geochemical profiling with the CTD showed a well-mixed upper water column with increased chlorophyll concentrations indicative of the the high productivity of the Namibian shelf. Oxygen concentrations declined below, although truly anoxic conditions were not present, even a few meters above ground, and dissolved hydrogen sulfide, which frequently occurs in micromolar concentrations in these shelf waters, was not detected. Deploying a so-called *pump-CTD* we obtained high depth resolution

profiles of the important greenhouse gases $N_2O$ and methane as well as other chemical constituents. In contrast to the regularly used CTD and sample bottle rosette system, the pump-CTD allows for the continuous sampling of water during deployment leading to a vertical resolution of about 1-2 m. It also allows us to pinpoint depths of low-oxygen water for obtaining samples for incubation experiments performed on-board. The near-simultaneous profiling and sampling has the advantage that the water samples are in the laboratory within minutes as the pump-CTD is lowered through the water column leading to minimal changes in the geochemical conditions.

After the first few days of intensive sampling along the continental shelf and a short westward transect to reach open ocean waters, the laboratories and freezers are packed with samples. The scientific party is analysing and processing samples and the intensive work on deck has now shifted to the laboratories of *R/V Meteor* as we head into oligotrophic waters.

Greetings from *10° 52' S 1° 34'E* from Tim Ferdelman, Chief Scientist, on behalf of the scientists and crew