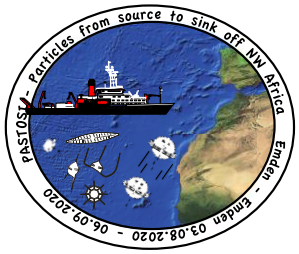
R/V METEOR
Cruise M165 (GPF 18-1_18)
03.08.2020 - 06.09.2020
Emden - Emden



2nd Weekly report, 10th – 16th August 2020

This week started with a blue ocean that was very kind to us. After passing the Canary Islands at sunset on Sunday evening, strong southward surface currents and winds helped us to reach our first research station already on Tuesday at lunch time. This allowed us to immediately start the recovery of the first sediment trap mooring. This mooring is operated as long-term monitoring station since 1988. At this mooring station, two traps collected material at 1228 and 3635 m water depth from November 2018 until March 2020. Fortunately, the 5 months longer than expected stay in the water column had caused no severe damage of the equipment. With exception of one of the two releasers the traps and carousels appeared undamaged. This resulted in an exceptionally fast recovery and at four o'clock local time both traps and releasers stood safely on deck.

The Tuesday evening as well as night, early morning and morning hours of Wednesday were filled by deploying several CTD/Rosette casts and in-situ pumps that collected both particulate organic matter (POM), as well as dissolved organic matter (DOM) from the deepest water layers and the bottom nepheloid layer respectively. Collecting large amounts of water at the same water depth (3800 m) allows us to study the relationship between the composition and age of POM and DOM. These research activities are mainly executed in relation to 3 PhD and 4 PostDoc projects that have recently been started within the MARUM Cluster of excellence: "The Ocean Floor - Earth's Uncharted Interface with the research Units: "The ocean floor as Receiver" and "Enabler Technology".

An in-situ pump is recovered.

The first sediment trap is recovered.

Collecting particles with in-situ pumps allows us to study the vertical and lateral displacement of POM. By combining filters of different pore sizes and materials we managed to simultaneously collect particles that allow the study of microplastic occurrence in the bottom nepheloid layer; the particle rich water layer that is positioned directly above the ocean floor.

After finishing the water sampling program the now serviced Mooring could be redeployed and was released successfully in the early afternoon to continue the particle flux monitoring for another two years. After release of the mooring we returned to the CTD/Rosette and In-situ Pump location to collect surface sediments.

Station work was brutally interrupted by an accident of one of the scientific cruise participants. Although not life threatening, the injury is such that it requires medical treatment ashore. Therefore, we interrupted our scientific program and headed north to Las Palmas, which we reached in the early morning of Sunday 16th of August. From there, a transport is organized to bring our college home on the most Covid-safe and direct way available.

Now, we have left the Port of Las Palmas and head southwards again to resume station work in the active upwelling off Cape Blanc presumably on Tuesday.

All people on the METEOR wish our college all the best, a safe trip home and a rapid complete recovery.

on behalf of the M165 cruise participants
met beste groet van de blauwe oceaan

Karin Zonneveld
MARUM, University of Bremen