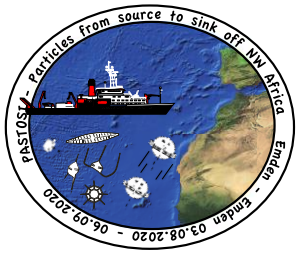
R/V METEOR
Cruise M165 (GPF 18-1_81)
03.08.2020 - 06.09.2020
Emden - Emden

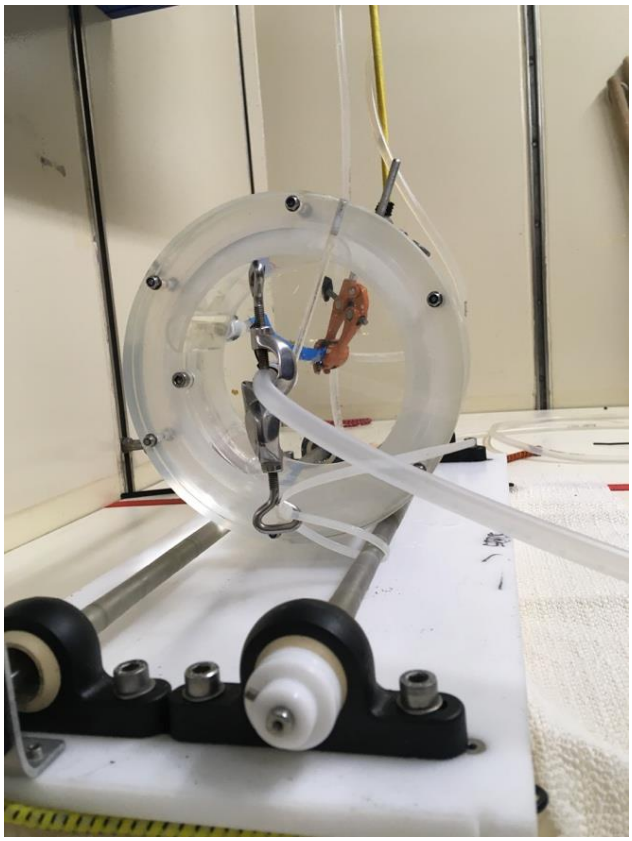


5th Weekly report, 31th August – 6th September 2020

Our long transit home has come to an end and we entered the lock that connects the Wadden Sea with the port of Emden on Sunday morning. By passing Delfzijl we met the R/V MARIA S. MERIAN which like us has finished her cruise.

After the intensive sampling last week there was not much time to relax. The transit time was intensively used to perform experiments and analyze the freshly collected samples. For instance, we investigate if and how the small particles that are being formed in the upper water column clump together and form aggregates. Furthermore, it is investigated how the biological, physical and chemical interaction between aggregates and dissolved organic substances in the water functions as well as how old the aggregates are that we have collected direct out of different water masses. It is assumed that like marine produced particluate organic matter also microplastics might be clustered into aggregates through which they could be transported to the deep ocean to settle on the ocean floor and form a pollutant "heritage" for future generations.

Last analyses using lightmicroscopy



Rolling tank to study the formation of aggregates

Our investigations aim to find out which particles clump to each other to form aggregates. For instance, do aggregates only include particles of marine origin or do they also capture microplastic. Furthermore, we would like to know how these aggregates sink, if they fall down directly or do they float and are transported vertically and how long do they remain in the water column before they settle. If we know this, we will better understand the ocean carbon pump and obtain insight in how microplastic behaves in the water column.

We are also interested in finding out which plastic types are being preserved in the sediments and if there are plastic types that can be degraded by e.g. by microorganisms.

Friday, we finished our last experiments and analyses on board of the METEOR to be continued in our home laboratories. Our equipment was safely stored in our three containers to be transported back to the home institutes on monday when we embark the ship.

Now at the end of this "corona pandemic" marine expedition we are very happy and grateful that we got the possibility to collect the many excellent data and samples from the upwelling area off Cape Blanc and be able to continue the long-term monitoring of this unique oceanic region with only a five months "corona gap" in our survey data. Our severe thanks to Captain Detlef Korte, the excellent R/V METEOR crew, the Gutachterpanel Forschungsschiffe (German Research Foundation), the German Research Fleet Coordination Centre (University of Hamburg), the shipping company Briese Research and everybody else that have made this cruise possible.

on behalf of the M165 cruise participants

beste groeten en blijf gezond,

Karin Zonneveld
MARUM, University of Bremen