

# Cruise METEOR M166

Emden – Emden, 09.09.2020 – 08.10.2020

4. Weekly report, 28. Sep. – 04. Oct. 2020



During the last week of work on the M166-cruise, we concentrated on the Western Valley and the region southeast of the valley, following the idea we obtained from our model results and last measurements on this cruise. We recovered the third short term mooring and after a long search for the forth mooring in the Valley, we found the releaser with a horizontal tilt on the ground, approximately 1 nm away from its original position. Apparently, a fish trawler caught this mooring; the remainders were the weights and the releaser. Captain Korte phoned with the Icelandic coastguard, who explained that fishermen handed parts of the mooring over. We could inform our colleagues in the Marine and Freshwater Research Institute in Reykjavik, who will take care for the data and the instruments and send them back to us.

Moreover, amongst many further CTD casts (sections, yoyo), we deployed two long-term moorings in the middle and the northeast part of the Western Valley, which will be recovered in 2021. These long time series for temperature, salinity and velocity help us to understand the interaction and its variability between the North Atlantic and the Nordic Seas. It enables us to watch changes of properties and volume transports of the North Atlantic inflow into the Nordic Seas and the dense overflow from the Nordic Seas. This allows also for an estimation of the contribution of the overflow to the Atlantic meridional overturning circulation. Furthermore, numerical models can be tuned and their model results can be validated with these data.

On Sunday noon, we have reached the end of our expedition in the Western Valley and Denmark Strait with 242 CTD/yoyo stations, 4 short-term and 3 long-term mooring deployments.

In spite of the heavy weather, which interrupted our work a couple times for one or two days, the atmosphere on board was always friendly, professional, helpful and relaxed.

During the final transit, work will be limited to some measurements on salinity samples collected earlier on the cruise, further analyses of CTD and moorings data, storing safely the instruments into containers and clearing the laboratories we used on the ship.

This is the last weekly report from the R/V Meteor Expedition M166, and I would like to thank the scientific crew for their great contribution to the work. I would especially like to thank Captain Detlef Korte and his entire crew for their professional cooperation and patience with our flexible work plans. I would like to thank our Senior Scientist, Bernhard Mayer, who not only helped with the cruise reports and the translation of the reports into German, but also with many additional efforts in planning and data analysis. Last but not least, I highly appreciate the fantastic and reliable work of Andreas Welsch, our talented technician with his excellent knowledge and nearly 25 years of experience in scientific cruises.



Pictures by Vincent Urban

Best wishes on behalf of all participants,  
Hossein Mashayekh Poul

R/V METEOR Monday, 05 October 2020

Institute of Oceanography, University of Hamburg

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