



RV Maria S. Merian

Cruise MSM-73

06.04.-22.05.2018

Cádiz – St. John's



4. Weekly Report

23.04.-29.04.2018

During the fourth week we continued our work along $\sim 47^\circ\text{N}$ and headed west towards Flemish Cap. On early Monday morning we recovered the bottom-mounted echo-sounder PIES BP-27. Recovery of PIES BP-31 followed during the night to Tuesday. So, all the echo sounders we wanted to retrieve in the Newfoundland Basin are now on board, we have read out all recorded data and will prepare the devices for the reinstallation at the end of the cruise.

On Tuesday, 24.04.2018, we focused on the deep-sea moorings located on the eastern side of Flemish Cap. At good weather and sea conditions we were able to successfully recover the two moorings BM-22 and BM-24. Both moorings are equipped with currentmeters and temperature/salinity sensors. They serve the purpose of determining the strength of the southward boundary current at the western edge of the North Atlantic and its variability. Both moorings will be reinstalled at the end of the cruise.

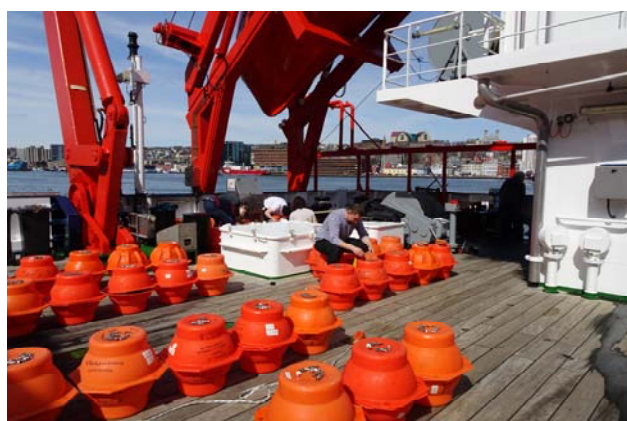
Following the mooring work, we made the fifth of seven Argo float deployments and completed a high-resolution CTD section that led from the deep Newfoundland Basin (water depth $> 4800\text{ m}$) to the 500 m isobath on the eastern side of Flemish Cap. Typically, we find the clearest signal, which indicates the presence of young Labrador Seawater (LSW), in the region of the western boundary current, the fastest propagation path to the south. This time, however, we passed an eddy located to the east of $37^\circ 30'\text{W}$ and found already there at about 1700 m depth pronounced features of young LSW (fresher water than in the boundary current and richer in oxygen and trace gases).

After we had finished work on the eastern side of Flemish Cap, on Wednesday, 25.04.2018, we headed into the shallow Flemish Pass (depth of about 1200 m). Instead of encountering fog layers that are typically found in this region, we were able to do work there in sunshine. In the late afternoon of the same day, we recovered the short mooring BM-25 and subsequently redeployed it. After that we started the transit to St. John's, Newfoundland. There, we arrived on Saturday

morning, visited the bunker pier to refuel, and left St. John's immediately. Since then we have been on our way to the Labrador Sea, where we resumed our CTD work at about 51°30'N on Sunday afternoon.

On behalf of all cruise participants

Paquor Kuts



While in St. John's, recovered floatation bodies stemming from the deep-sea moorings are inspected for damages. Foto: M. Köllner.



O. Huhn while taking water samples for tracer analysis. Foto: D. Kieke.

