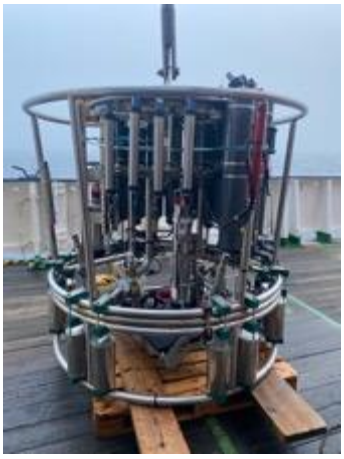
2nd Weekly Report (15. – 21.08.2022)

An equally busy and successful week lies behind us, during which we were able to complete the exchange of the moorings of the 53°N observatory. At the beginning fog delayed the work but the visibility improved and so all moorings were recovered successively. Afterwards the instruments were calibrated with the help of the CTD and finally the moorings were deployed again. The instruments that measure currents, salinity and temperatures recorded almost 100% of expected data. This is primarily due to the careful handling and programming of the instruments by the technicians and helpers on board, two years ago when we deployed the instruments, but also on previous cruises. We are confident it will be again the case for the M184 cruise.

View from the upper mast platform (more than 30m height) towards the deck during mooring operations.
Photo: A Raeke



CTD Rosette with mooring sensors attached.
Photo: F Dilmahamod

The instruments that are used for ocean physics measurements are long tested and, for the most part, work very reliably. Unfortunately, this is not always the case for chemical sensors, so that we are experiencing failures due to corrosion in the instruments used to determine dissolved oxygen in seawater. Many instruments we service are installed for partners, especially our Canadian partners Dalhousie University and Ocean Tracking Network Canada (instruments to detect marine animals) as well as the University of Rhode Island, USA (instruments to measure the CO2 uptake of the ocean).

During the remainder of the cruise, the data records from the 53°N observatory will now be verified and initial calibrations will be applied. For the calibrations, depth profiles have been recorded at each mooring position for comparison. In addition, the recovered instruments were mounted to the CTD in order to generate another set of comparison data. The possibility to correct the data before and after deployment based on reference data makes the measurements that stem from moored instruments very accurate and thus usable for climate studies of various kinds.

In addition to the mooring work, an underwater glider was deployed shortly after arrival in the working area "53°N Observatory". After one week of measurements, the glider was successfully recovered last Sunday, August 21. The exact buoyancy of the glider had to be checked before deployment and corrected if necessary (see 1st weekly report). Even though we see that the surface water is quite "warm" with up to 10°C, this is done with a survival suit.

Félix Margirier (GeorgiaTech, USA) installing a wing on the underwater glider in a pool on deck RV METEOR.
Photo: L. Blum

The weather and sea conditions are still in our favor. We were also rewarded this week with a number of fascinating natural phenomena: besides whale sightings, fog in conjunction with the overlying sun produced beautiful halo phenomena. We also had the rare pleasure of seeing spectacular aurora borealis at this latitude.

In clockwise direction, starting upper left: Halo at the boundary between fog and clear sky (Photo: A. Raeke), aurora borealis (Photo: F. Dilmahamod), Whales (Photo: P. Henning)

The progress of the voyage, blog entries and measurement data can best be accessed via the Beluga web portal of GEOMAR https://beluga.geomar.de/m184.

With best regards on behalf of all participants of the RV METEOR cruise M184,
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