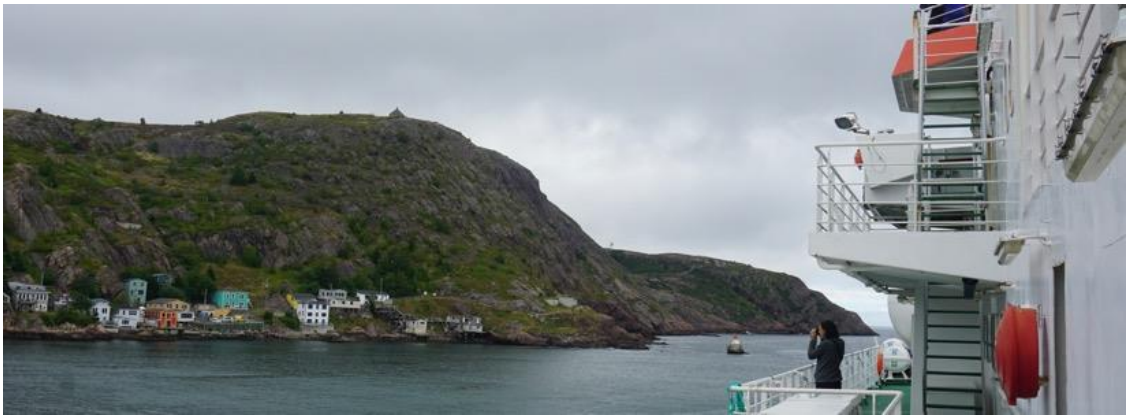
1st Weekly Report (12. - 14.08.2022)

The expedition M184 with the Research Vessel METEOR started on Friday, August 12th, 2022 in St. John's (Canada). Fortunately, all cruise participants were tested negative for COVID-19. We have about 5 weeks ahead of us until the cruise will end in Hamburg on September 15th. The main focus of our work is servicing long-term observatories installed in the Labrador Sea since the mid-1990s. These observatories allow us to continuously measure the velocity and composition of seawater and by using this data we are in a position to infer processes linked to the climate in the Northern Hemisphere. Moreover, the data from the cruise will provide a detailed picture of the vertical structure of the Labrador Sea in Summer 2022 and can be compared with earlier surveys to detect changes.



RV METEOR M184 expedition: departure from St. John’s, Newfoundland (Photo: J. Karstensen)

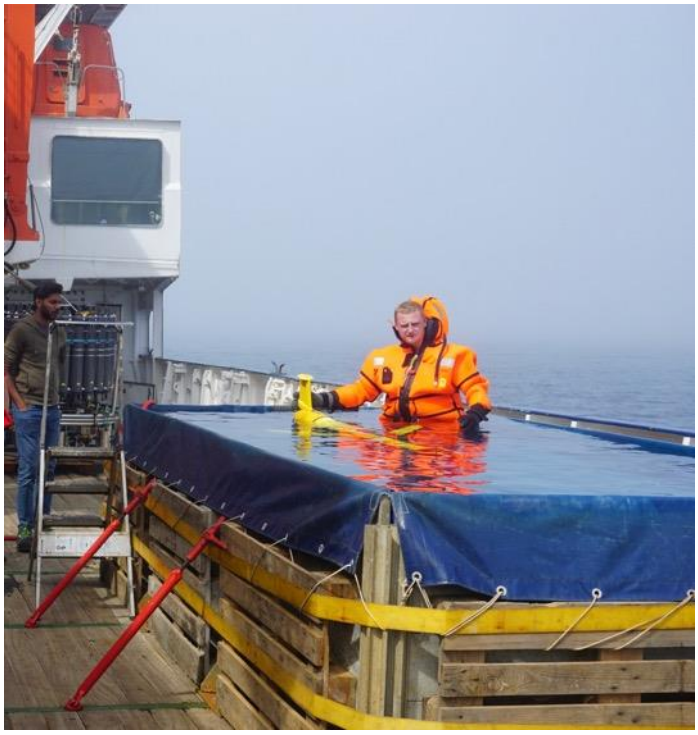
After the obligatory safety briefing, the first CTD station was successfully carried out just one hour after departure. Station 27" has been maintained by Canadian colleagues since 1946 and it is mandatory for passing research vessels to take measurements there and then enter them into the database. Time series as long as Station 27 are rare and their analyses show many interesting phenomena, for example that the effects of global warming can have very different regional manifestations.

During the still ongoing transit towards the "53°N Observatory" we operated the "Moving Vessel Profiler" and measure the vertical structure of the upper 100m of the water column while the ship is moving with 10kn full speed. Of particular interest to us are “fronts" - regions in which the vertical structure changes strongly over short distances and which support biological, chemical and physical exchange processes. First analyses of the data show that we have sampled fascinating frontal structures associated with different current branches off the coast of Newfoundland and Labrador.

The weather has been calm and even though the sun has been a bit slow, at least all cruise participants have been spared from seasickness so far. The calm weather was also used to prepare the upcoming deployment of underwater gliders. Gliders are remotely, via satellite, operated vehicles to sample the ocean. Before the deployment, it is important to determine the buoyancy state of the devices, ideally considering the seawater in which the deployment will be carried out.

For this purpose, a pool is set up on the deck of the METEOR, filled with local sweater and used for diving tests. In order to support the test-device it is necessary that one person enters the pool. Given the cold water off the Labrador coast, this exercise is not necessarily a pleasure and a survival suit, which are available for all cruise participants, was used.

The pool is also used to test the surface drifters of the Helmholtz-Zentrum Hereon in Geesthacht. These drifters will allow determining the flow close to ocean surface using high temporal resolved position data obtained via satellite.



Test of an underwater glider vehicle in the test pool on deck of RV METEOR (Photo: J. Karstensen)

The progress of our cruise, current weather and sea conditions, stories from on-board and selected measurements collected during M184 can be accessed at any time on GEOMAR's Beluga webportal at https://beluga.geomar.de/m184.

Last but not least, we would like to mention that all are well and good and that the food prepared by the two cooks Patrick and Peter is once again very tasty.

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

Johannes Karstensen

(GEOMAR Helmholtz Centre for Ocean Research Kiel)