

MSM76
Weekly Report #1
11.08.2018 - 12.08.2018

In the early afternoon of 11 August the research vessel Maria S. Merian left the port of Reykjavik to start the MSM 76 expedition "Nordic Seas Exchanges". On board there are scientists from the Alfred-Wegener-Institute for Polar and Marine Research, and from the Universities of Hamburg, Delaware (USA) and Bremen. Our work area will include Denmark Strait between Iceland and Greenland, the shelf of East Greenland and Fram Strait at the transition from the Nordic Seas and the Arctic Ocean.

Coming from the Nordic Seas, dense, cold water flows over the Greenland-Iceland Ridge as part of the global ocean circulation in Denmark Strait as a bottom-intensified current. The entrainment of ambient water into this current is most intense within the first 100 – 200 km downstream of Denmark Strait. Here both warm Atlantic Water and old water originating from the shelf of Greenland are mixed into the current. However, neither the processes nor the locations of the intense mixing have been characterized well. In this expedition we aim at continuing the long-term observations of the overflow in Fram Strait, to conduct a process study in the region of strongest mixing, and to investigate the circulation of Atlantic Water at the transition between the Nordic Seas and the Arctic Ocean as well as on the shelf of East Greenland.

In the early morning of 12 August we arrived in the Denmark Strait area. During the day, we were able to conduct a survey across the deep overflow plume at the continental slope of Greenland. Here we observed current velocities within the plume of up to 3 knots. The survey served us to define positions at which moorings were supposed to be deployed within the plume. In the evening of that day already three of a total of six moorings were deployed successfully. They will remain in the ocean for 2 weeks to measure continuously velocities and temperatures within the cold overflow plume.

We are glad about the successful start of the expedition, the good weather, the calm seas and the welcoming atmosphere aboard Maria S. Merian.

Best wishes from board on behalf of all participants,

Torsten Kanzow