

MSM93 Emden-Emden
Weekly report 5

The past week had some variations and was different than planned, but nonetheless good. At the time of the last weekly report we were still attempting to get to Scoresby Sund. Multiple glaciers terminate in that giant fjord in eastern Greenland which transport Greenland's ice into the ocean. It is hypothesized that those glaciers are also melted by Atlantic Water (the object of our scientific work program in Fram Strait). Scoresby Sund and especially the area where it transitions into Nordvestfjord with steep cliffs on either side is supposed to be gorgeous. At least we had heard as much from colleagues who had worked there during two previous Merian cruises (MSM56 and MSM76). We would have liked to recover moorings which had been deployed two years ago during MSM76 to document the flow of Atlantic Water.

The weather forecast was good when we departed Fram Strait, however the forecasted storm did not obey the forecast exactly. It was strong a little bit further to the west and pushed dense sea ice from the north in front of the entrance of Scoresby Sund. We all enjoyed the view onto the ice and Greenland which appeared to be so close even though we never got closer than 30-60km to the coast. The bridge officers put in all their combined experience, but on Monday evening they unfortunately had to declare defeat. The multi-year sea ice which had been pushed together to concentrations of 100% was too much for Merian (Photo 1).



Photo 1: That was too much for the marginal ice zone research vessel Maria S. Merian: The entrance to Scoresby Sund can be seen in the background. However, in the foreground there are more than 30km of multi-year sea ice which separated us from our goal. (Photo: T. Kalvelage)

Now a plan B was in dire need. While we retreated out of the ice we passed by a slightly taller ice floe. In only about a ship's length distance we could see a polar bear mother with her two cubs. As the ship approached, she instructed her little ones to hide behind the ice floe. We could hear her barking, something that deeply impressed even seasoned Arctic Ocean scientists. Then a head periodically peaked over the top of the ice floe and as the ship slowly receded, the bears had curious looks at what had just passed by them (Photo 2).



Photo 2: After the ship had gained some distance again, the polar bear mother allowed her cubs to have a direct look at the ship. (Photo: Ch. Konrad)

Later we stopped and used the calm seas in the ice to deploy the Triaxus for testing purposes. The reason is that somewhere below water we had a leak current in the high voltage direct current supply. That is something that, if left unattended, can seriously damage the system. We were able to identify the problem with our combined (detective-)forces and to then fix it surprisingly quickly. By that time, we had already gotten out of the ice and it was time for Plan B: We towed the Triaxus at a perpendicular angle to the East Greenland Current for two long distance transects. This picture of the physics and biology in the upper water column away from the ice edge to the open ocean is something that we had intended to measure in Fram Strait, but we had not achieved it due to time and instrument constraints. Shortly before finishing the first transect we had another leak current. But we again were able to locate (at a different location!) and fix it. As a result, we were able to continue to measure until yesterday morning.

Now we are on the way home. In a few hours we will have our last station in the international waters east of Iceland. And then it will be time for a happy and a sad face at the same time as it will be “end of science for this cruise”. We have achieved a lot, are very happy and thankful about it. The ship and its crew were superb. But after almost 6 weeks away from home we are looking forward to coming home again. However, there “Corona is still happening”. Our life has mostly been unaffected by it for the past weeks and it would be great if it could stay that way, but of course that is no reason to prolong this cruise now.

On Thursday we will be in Emden. Until then,
Best greetings,

Wilken-Jon von Appen
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