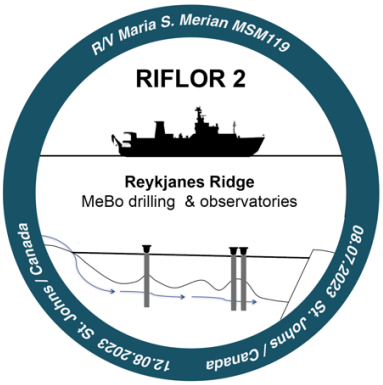
R/V Maria S. Merian

Expedition MSM119 "RIFLOR2"

08.07.2023 – 12.08.2023

St. John's – St. John's



Weekly report #1

Expedition MSM119 has just started, so that we cannot report any scientific operations or results.

The overall goal of the expedition is to study a young ridge flank system located south of Iceland on the Mid-Atlantic Ridge. This is the location of the Reykjanes Ridge, which represents one of the key study areas of Cluster of Excellence „Ocean Floor" at MARUM, University of Bremen (https://www.marum.de/en/The-Ocean-Floor.html), and also the main focus of an experiment planned within the collaborative project AIMS^3 as part of the DAM-research mission CDRmare (https://aims3.cdrmare.de/en/).

The planned research work will shed light on the relevance of hydrothermal circulation at the flanks of mid-ocean ridges, and in young, basaltic ocean crust with thin sediment cover along the Reykjanes Ridge south of Iceland. The global significance of these circulation systems and their role in exchange processes between geosphere and hydrosphere, the deep biosphere, and their role in the Carbon cycle will be estimated by drilling in locations of fluid recharge (inflow of cold seawater) and discharge of warmer water. For this purpose we drill the cold and warm ends of the so-called Squid Pond, recover core of sediment and ocean crust, and equip the holes with borehole observatories. In parallel we will deploy the gravity corer and a seafloor lander in areas closer to the spreading centre in somewhat younger ocean crust.

Figure 1: R/V Maria S. Merian at the pier in St. John's, Neufoundland, the night before departure.

After the arrival of R/V Maria S. Merian on 04.07.2023 in St. John's, a 10-person MARUM delegation started the mobilisation procedures of the MARUM MeBo70 seafloor drill rig (Abb. 1). After having completed the bunkering, a safety drill and a system test of the MeBo device in shallow water (Abb. 2), the ship is steaming towards the southernmost tip of the Reykjanes Ridge since the early afternoon of 08.07.2023.

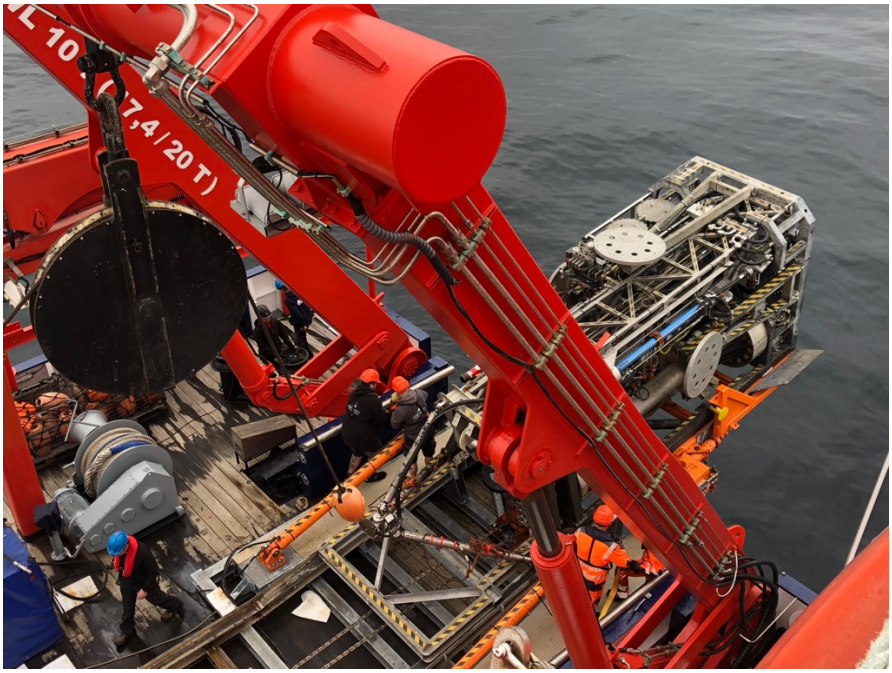


Figure 2: The MeBo70 seafloor drill rig when launched for a system check after having left St. John's harbour.

With best regards on behalf of the entire MSM119 team

Achim Kopf (Chief Scientist)