1st Weekly Report – MARIA S. MERIAN MSM129/1

Leg 1 of the MARIA S. MERIAN expedition MSM129 began on 25 May 2024 after 4 full days in Rostock-Warnemünde. This stop was special because in addition to the obligatory unloading and loading of scientific equipment and the setting up of devices, a number of organizations and groups used the lay days in the home port for meetings and to present the magnificent ship Maria S. Merian to the interested public. A particular highlight was certainly the Open Ship Day on 23 May, on which more than 1,300 visitors were able to get to know the ship on a tour and current research results were presented by colleagues from the IOW.

Situation in the ship's hangar during set-up for the MSM129 expedition. Most of the equipment to be used is brought on board for each expedition (Photo: Abed Hassoun)

After departure, we are now on our way towards the Skagerrak to then head west on a 'great circle' (shortest route) to our final port of St. John's in Canada. During this transit, measurements will be taken almost continuously. These include mapping the seabed with the multibeam echo sounder; measuring ocean currents down to a depth of 1000 meters with the 'Acoustic Doppler Current Profiler'; near-surface measurements of temperature, salinity, turbidity, chlorophyll-a content and parameters used to determine the carbon dioxide dissolved in the water with the so called FerryBox and the thermosalinograph.

The fact that these measurements are carried out on every expedition of the Merian, but also on most of the German research vessels, is thanks to the Underway Research Data Project of the German Marine Research Alliance (DAM). Data and sensor experts from the participating marine research institutions in Germany have been working together since 2019 to ensure the optimized use of German research vessels for data collection. To this end, process chains for processing sensor data have been established to ensure that quality-controlled data is made available in easy-to-use formats for interested users (e.g. scientists) via the German Marine Research Portal (www.marine-data.de).

A large part of the team on board are the experts of the DAM underway research data project, who develop and drive forward further optimization of the process chains during the expedition. One goal is the automated connection of the DAM data streams with international initiatives that enable production of weather and ocean forecasts. To do this, it is necessary to feed the data into a global system known as the 'Global Telecommunication System' (GTS) of the World Meteorological Organization (WMO). Weather observations from all over the world are exchanged via the GTS and form the observation basis for our daily weather forecast.

The progress of our journey and the current weather and sea conditions can be viewed at any time on the GEOMAR BELUGA website (beluga.geomar.de/msm129) and more information will be made available via our travel blog (www.oceanblogs.org/msm129/).

RV Maria S. Merian leaves the harbour of Rostock-Warnemünde shortly before the pilot disembarks. (Photo: Abed Hassoun)

The atmosphere on board is excellent - as is the food that the two chefs Frank and Matthias are preparing for us.

Best wishes from on board on behalf of all participants

Michael Schlundt (GEOMAR) Co-Cruise Leader MSM129/1