

# **TRR 181 Expedition SONETT RV Meteor M180 23.02. — 14.04.2022 Montevideo — Cape Town**



## **1. Weekly report (23.2.-27.2.2022)**

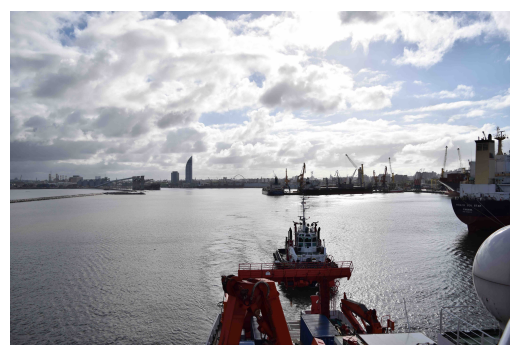
The RV Meteor expedition M180 is part of the TRR 181, an interdisciplinary research program funded by the Deutsche Forschungsgemeinschaft (DFG). The topic of TRR181 'Energy transfers in atmosphere and ocean' is the representation of the oceanic and atmospheric energy cycles in climate models. The shipboard party is formed by 25 scientists of the Universities Bremen and Hamburg, the Institute for Baltic Research Warnemünde and the Helmholtz-Zentrum Hereon.

The oceans' interior is not at rest.

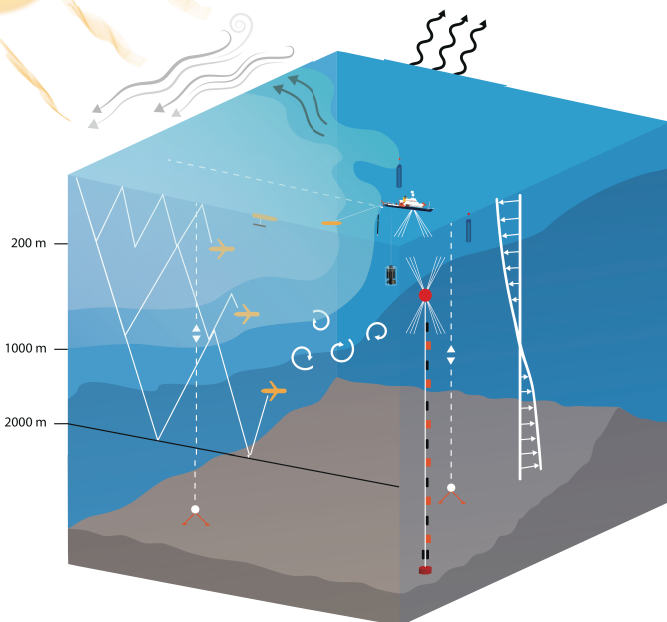
Movement exists in all direction and on a variety of scales that range from basin wide current systems to the millimetres of small scale turbulent motion. The main energy sources for these motions are wind and tides. The interaction between the different scales and the exchange of

energy is not well understood. Our project has the aim to better understand the fluxes and dissipation of this energy in the surface layer and the ocean interior to improve the parameterization of these processes in climate models. We do this by using a suite of different instrumentation to observe the energetics in a region south of the Walvis Ridge in the southern East Atlantic, where large propagating eddies, the Agulhas rings, interact with their surroundings, and the tidal waves that are generated at the underwater ridge. This clash affects the eddies themselves, the surface structures, the propagation of the internal tidal waves, the mixing of different water masses, and thus the distribution of energy in the ocean.

The start of the cruise was dominated by the health and safety measures imposed on us by the pandemic. Luckily, our self-quarantine prior to the cruise proved effective, and none of the participants tested positive after boarding the Meteor, so we could leave port in Montevideo as planned on the morning of the 23rd in calm and sunny weather. During the first week on board, we still have to stick to the necessary



Leaving Montevideo (Foto. P. Dennert).



Schematic of the instrumentation used in the SONETT experiment: glider, drifter, moored instruments, ship-based lowered and towed equipment.



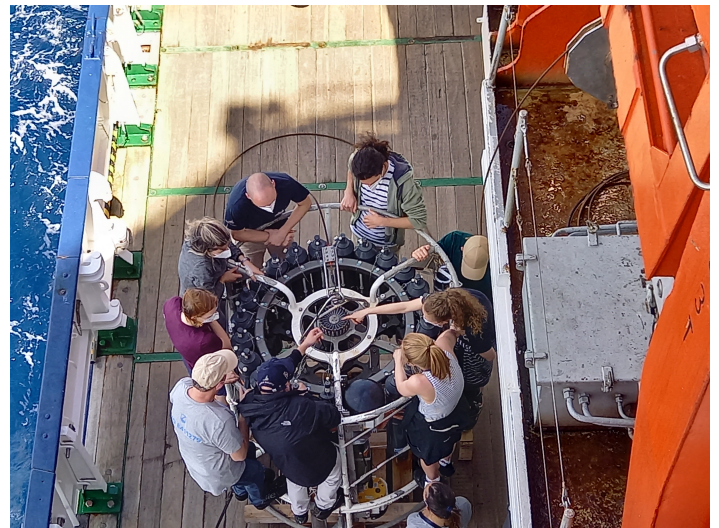
precautions against a possible outbreak, so everybody has to wear face masks and self-test in the morning. It helps that the weather is warm and sunny, so we are able to spend a lot of time outside. If all goes well, we will finally be free of the restrictions on March 3. Meanwhile, the groups on board use our 12-day transit to the working area to install and test their instruments and observing systems. A CTD test station has already been successfully completed, and tests for the turbulence probes and the glider will follow soon.

More information about our research activities and life on board can be found on Twitter (#trrSONETT) and in forthcoming blog posts (<https://www.marum.de/en/Discover/Logbuch-M180.html>).

Best wishes from the sunny South Atlantic to all friends, families and colleagues on shore, Maren Walter and the scientific party of M180



Rigging up the antennas for glider communication on the mast gives the best view of the Meteor (Photo: M. Unterberger).



Getting ready: assembly of surface drifters and preparing the CTD system (Photos: M. Walter, A. Raeke).