



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



7. Weekly report (04.04.-10.04.2022)

After the successful retrieval of all three gliders on Sunday, the Meteor went back north to deploy the second set of drifters. For this deployment, we chose a region in the north-western part of our working area that is less energetic than the first deployment site, in the hope that the dispersal of the drifter will provide insights into different horizontal turbulence regimes. This time, we deployed 6 sets of surface drifters over a small triangular area with the zodiac, as well as 4 sets of the larger SVPs with drogues down to 15m depth over a wider area from the Meteor. Prior to the drifter release, we deployed the third Argo float, and afterwards, we completed the set of time series CTD stations with a 36-hour series, all at approximately the same position upstream of our previous work within the tidal beam emanating from Walvis Ridge.

The last couple of days of research are again devoted to the study of frontal evolution on the sub-mesoscale. After identifying a suitable front on the way south, we started observing the front with microstructure turbulence transects on Friday. On Saturday, the weather was calm enough to finally employ the Catamaran during the microstructure transects, to simultaneously observe the upper ocean velocity undisturbed by the ships' hull. Between the transects, we took some more shallow CTD stations to sample helium in the upper 150 m to determine the impact of the mesoscale eddy field on vertical exchange.

On Saturday, the last CTD cast was celebrated with a small get-together on deck. For now, turbulence and Catamaran observations continue. We will be finishing the work tomorrow, and after that all that will be left to do is to pack up our instruments and clean the labs, which will take up the remaining time of 2.5 days of transit to Cape Town, where we will reach port in the evening of the 13. April after 51 days at sea.

We would like to express our heartfelt thanks to Captain Hammacher and the Meteor's crew, who were always supportive and made it possible to find solutions to continue our work even after the loss of the whole CTD system and sea cable so that we were able to carry out most of the planned work and gather a valuable set of data despite the throwbacks.

Kind regards and greetings to all friends, families and colleagues on shore from the scientific party of M180,

Maren Walter
(Bremen University)