

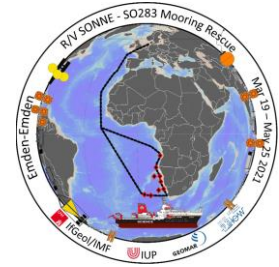
SONNE

SO283 "Mooring Rescue"

Emden - Emden, 19.03. - 25.05.2021

5. Weekly Report

12. - 18.04.2021



Cape Town - the turning point

It was definitely an interesting and exciting week that is now behind us. In the open Atlantic we deployed the last PIES for the TRR181 program before setting course for Cape Town. On the way there, we launched a so-called Bio-ARGO float for a French research institute in a cyclonic ocean eddy on the morning of 13.04.2021. These ARGO floats are equipped with various sensors and autonomously measure physical and chemical parameters in the upper 1000 m of the water column and then send the data via satellite to the home institutes every 10 days for several years. At the moment, nearly 4000 of these floats are underway in the oceans, leading to a whole new data base for understanding the world's oceans.



Alexandra Andrae from GEOMAR prepared the Bio-ARGO float ready for deployment and checked all sensors before the high-tech device was deployed in the South Atlantic and started its measurement campaign for the next years (© IOW/Bita Sabbaghzadeh and Universität Hamburg/Knut Heintz).

And then it was time: after almost four weeks on the open ocean, with nothing but the endless blue sea around us, we saw land again. Birds, whales and seals greeted us, butterflies and dragonflies basked on the top deck, the color of the water and the smells in the air changed. How must it have been for the great seafaring explorers back then, not knowing when and where they would see land again? On schedule, we arrived at the port of Cape Town at 07:15 in the morning of April 14, 2021. A surprise was waiting for us there: At the neighboring pier lay the famous drilling ship JOIDES Resolution, for decades in the service of research for the International Ocean

Discovery Program (IODP), and greeted the SONNE while going alongside. In Cape Town, fuel was bunkered during the day and fresh provisions were taken on board. After less than 12 hours of stay, we cast off again at 18:50. With our stopover in Cape Town we left the most southern point of our long journey at the same time with the most beautiful sunset. The turning point was reached, from now on we are heading north again.



Cape Town at the foot of Table Mountain (© Universität Hamburg/Knut Heinatz).

The winds around the Cape of Good Hope have always been notorious and feared. And we got to feel that clearly right away. Within a few hours the weather conditions changed dramatically, so that on the evening April 15, we were confronted with wind force Beaufort 9 and 4.5 m high waves. What a contrast to the almost unusually calm conditions of the previous weeks. However, we were well prepared so that even under these difficult conditions the research continued - and very successfully. The two mooring systems in the TRAFFIC program could already be deployed again on April 15 and 16, respectively, and will measure the particle flux and other biogeochemical parameters until fall 2021, when colleagues on SONNE 285 will again be on site in the working region.

The mooring work was flanked by numerous CTD stations and micro- or zooplankton net deployments, which brought an abundance of plankton communities under the microscopes and onto the filtration units of the working groups. In addition, so-called drifter systems were also released, each equipped with five sediment traps at different depths to measure the particle flux and vertical zooplankton migration. These drifter systems are not moored to the bottom, but float autonomously in their water mass and transmit their current position to the ship via satellite every 5 minutes. In this way, research work can continue even at greater distances and the systems can be recovered once the work is completed in the respective working region. The greatest danger is posed by the intensive fishing activities in the Benguela upwelling area, so one should always keep an eye on the position of the drifters and the ship movements in the vicinity day and night.



Teamwork: The head buoy of a drifter system is deployed (© University of Hamburg/Knut Heinatz).

So on Sunday, 18.04.21 shortly before 20:00 shipboard time we conclude the station work in the Exclusive Economic Zone of South Africa and can put a big green tick behind the work in the southern Benguela upwelling area. Check! All plans could be fulfilled to 100%. Now we are heading directly to Walvis Bay for another stopover and hopefully we will have similar success in the northern Benguela upwelling area off Namibia.

On board everyone is still motivated and greets the people at home.

At sea, 18.04.2021

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