M188

Walvis Bay - Walvis Bay
07.03. - 13.04.2023

3rd Weekly Report
(20. - 26.03.2023)

On Monday, March 20, after all formalities had been completed, we left the port of Cape Town in the afternoon. First, we had again a longer transit to get back to the work area. On Wednesday, we had a mandatory safety drill. After we gathered on deck, some volunteers were able to try out the survival suits and test them in the water pool.

This week's science program consisted mainly of surface drifter and glider deployments and a CTD time series station. During the transit, we monitored the development of eddies in the work area using satellite altimeter data and selected a position in the center of an anticyclonic eddy to deploy the gliders and drifters.

Fig. 1: Survival suits are tried out (Photo: C. Mertens).

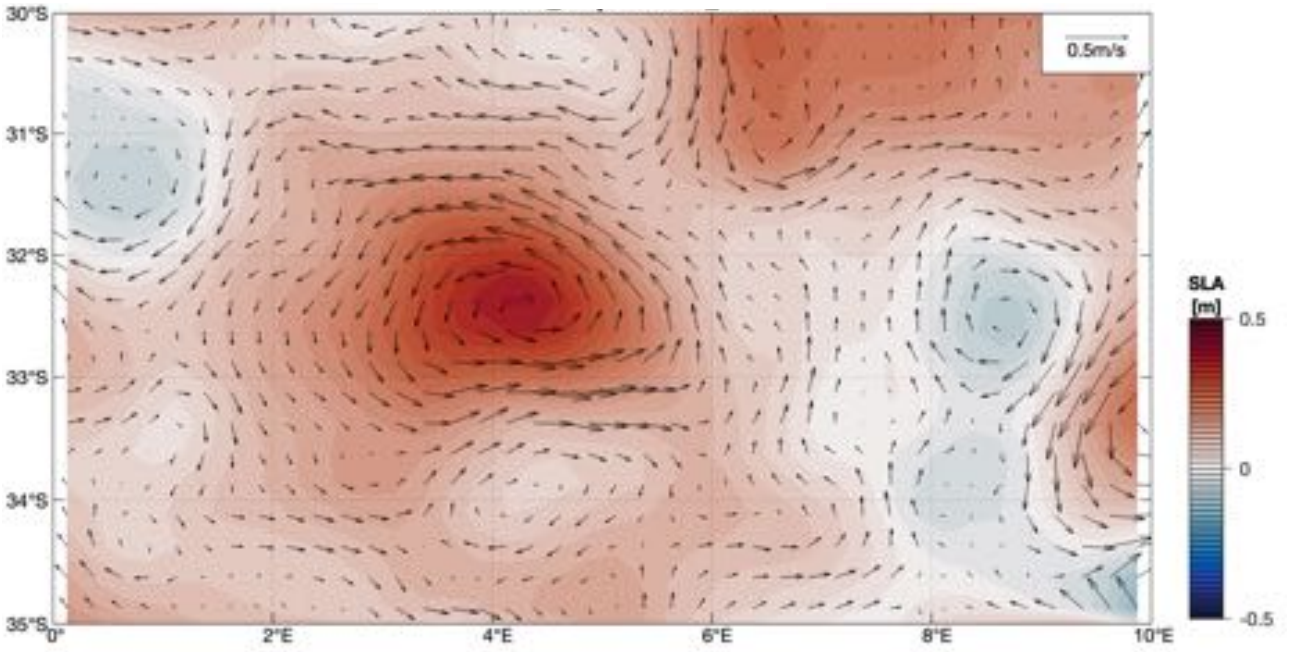

Fig. 2: Sea surface height and current velocity in the working area from satellite data. Gliders and surface drifters were deployed in the center of the eddy (Figure: B. L. Duong).

To wait for calmer weather, we first made a CTD permanent station near the edge of the eddy. Repeated CTD and ADCP measurements are used to measure the short-term changes in stratification and currents. For example, horizontally the direction and strength of the tidal current changes with time, and vertically the warm and cold water layers rise and fall. From both quantities together, the energy fluxes of internal waves can be determined, and furthermore, the influence of eddies on these energy fluxes will be investigated.

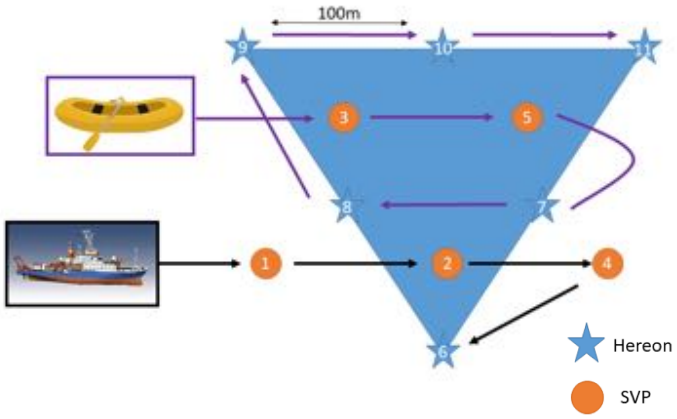

Fig. 3: Schematic representation of the drifter deployment (Figure: E. Breunig).

Fig. 4: The two types of drifters during deployed: SVP (Surface Velocity Project) drifter with a sail at 15 m depth on the left and a custom build hereon drifter on the right (Photos: A. Welsch).

We were then able to deploy the two gliders in the center of the eddy in good weather with calm conditions, using the inflatable boat. Both gliders successfully completed their test dives and could start directly with their missions. Subsequently, 11 drifters were deployed in a regular pattern in the same area. To achieve this, the drifters were deployed in a well-coordinated manner simultaneously from the ship and the inflatable boat. Gliders and drifters will now carry out measurements together in the center of the eddy for a few days, after which the gliders will slowly make their way toward the rim of the eddy.

Best wishes from the scientific party of M188 to all families, friends, and colleagues on shore.

Christian Mertens
(University of Bremen)