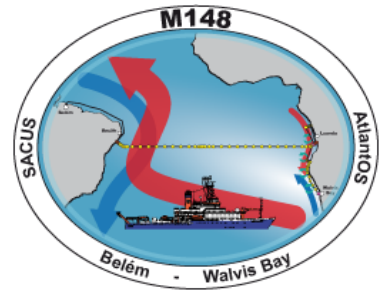


FS METEOR Cruise M148

May 24 to June 29, 2018

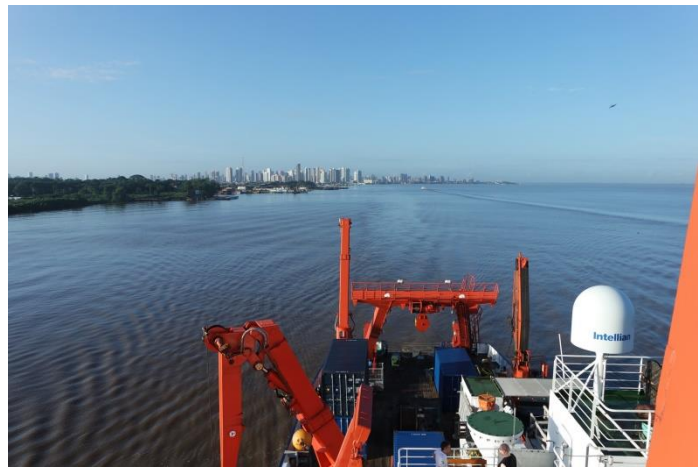
Belém (Brazil) – Walvis Bay (Namibia)



1st Weekly Report, May 27, 2018

On Thursday May 24 we timely departed from the harbour of Belém in Brazil at 6:30 am. Following the Amazon River downstream, we reached the Atlantic at 2:30 pm on the same day.

The physical-biogeochemical program of the expedition focuses on a hydrographic and mooring survey along a transatlantic section at 11.5°S and a measurement program in the Benguela upwelling region off Angola and Namibia. It combines the aims of the two BMBF collaborative projects “*Southwest African Coastal Upwelling System and Benguela Niños II (SACUS)*” and “*Regional Atlantic Circulation and Global Change (RACE II)*”.

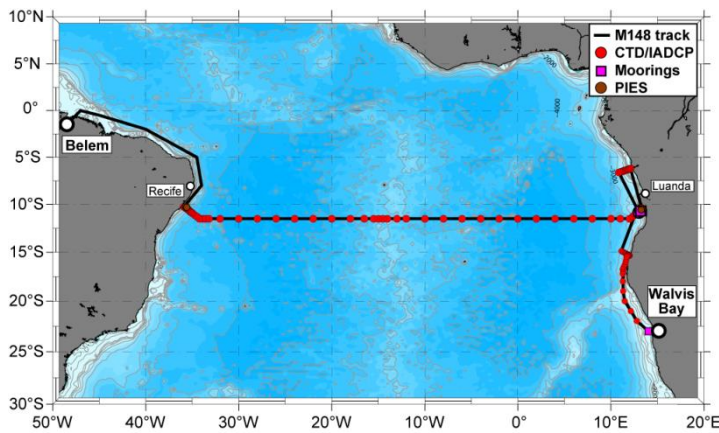


A view of Belém and the Amazon River shortly after departure (Photo: Finn Heukamp).

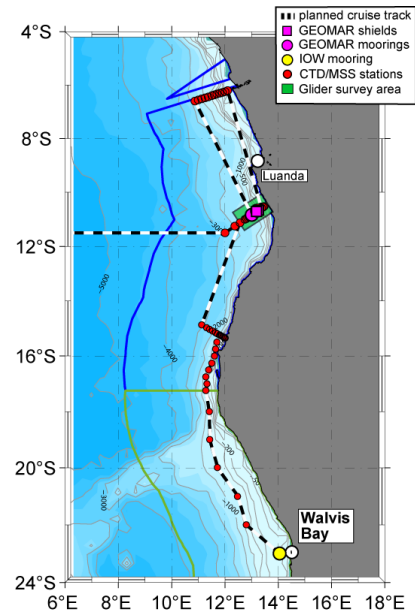
The hydrographic data from 11.5°S and the time series from the moorings will be used to investigate the strength and variability of the meridional overturning circulation in the tropical South Atlantic. Additionally, they will provide information on the variability of water masses in the deep ocean. In the Benguela upwelling region, our research goals are to investigate the variability of the eastern boundary circulation as well as the propagation of coastally trapped waves. During a 4-day process study in the Angolan upwelling region, we will elucidate the physical mechanisms contributing to the upwelling phenomena and investigate their coupling to biogeochemical processes.

Apart from the hydrographic measurements, the work program includes servicing of moorings and bottom shields, deployments of autonomous platforms (gliders), microstructure measurements and the analysis of water samples for oxygen, salinity, trace gases (N₂O, CO₂, CO), nutrients and their isotopes. Moreover, continuous underway measurements of trace gases and temperature and salinity in the surface

waters are recorded. Similarly, currents in the water column below the vessel are continuously measured.



Cruise track and stations of M148. High-resolution hydrographic stations will be carried out along the transatlantic section along 11.5°S (left). The second working area is the Benguela upwelling region off Angola and Namibia (right).



We are an international team of scientists from Germany, Brazil, Angola, Benin, Argentina, Chile, Columbia and Spain. Amongst us are six volunteer who were carefully selected from 120 applications and received a fellowship from the *Partnership for Observation of the Global Oceans (POGO)*. The training program of the fellows includes a month-long visit to GEOMAR in Kiel after the cruise. The SACUS project comprises a close cooperation between German scientists at GEOMAR and partner institutions in different countries in southern Africa. We thus welcomed three colleagues from the Instituto Nacional de Investigacao Pesqueira in Luanda and Namib (Angola) aboard our cruise.

In three days we will have reached our first station at 11°S on the Brazilian shelf. Perfect weather conditions and the excellent collaboration with captain Rainer Hammacher and the crew of METEOR certainly contributes to the pleasant working atmosphere on board the vessel.

Best regards from the equatorial Atlantic,
 Marcus Dengler and the participants of M148