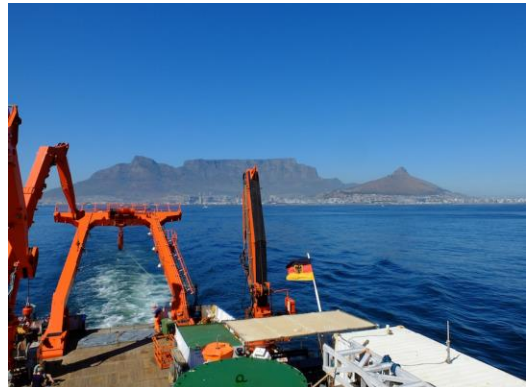


# 1. Weekly report - Cruise M124

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On Monday, 29th of February at 10 am we left the harbour of Cape Town with an excellent view on the towns landmark – the prominent Table Mountain. But actually the day started way earlier: to be sure that no stowaway was hiding on board, at 6 am the ship was searched with the help of sniffer dogs. A trip of approximately 6000 km through the South Atlantic Ocean lies ahead of us and will end on the 18th of March in



Sailing with view on the Table Mountain

Rio de Janeiro. The first hours on board spinned away, as heaps of marine animals were spotted – humpback whales, dolphins and of course seals, which even curiously circled the probe during our first sampling.

We have been at sea for a week now and without problems we have been working on our scientific program, dealing with the the sea floor, the water column and the atmosphere. Most sampling takes place without stopping the ship. The currents under the hull are being measured continuously with the help of acoustic techniques down to 1500 m. About once an hour a vertical profile of temperature and salinity down to 450 m depth is taken. The probe used for this is equipped with a special mechanism that can measure accurately even at a ship speed of 20 km/h. Once a day the Meteor stops and we deploy the MultiNet. With the MultiNet water of certain depth intervals - for example water between 700 m and 100 m depth or between 100 m and 50 m depth – is filtered and the contained microorganisms are then identified under the microscope.

The mix of nationalities on board is impressive – people communicate in English, Italian, Brazilian, Africans, Greek French Chinese, Swiss German and of course German. One reason for this potpourri is the fact that we have nine international junior scientists from bachelor to PhD student on board, who all brought their own little projects. They were selected to participate the cruise themed “MyScience-Cruise” (<https://portal.geomar.de/web/mysciencecruise>), and are financed by the Kiel Cluster of Excellence “The Future Ocean” in the framework of the semester topic „Ocean Observations: From Sensor to Knowledge“. Further support came from the „Partnership for Observation of the Global Ocean (POGO)“ and the European ocean observation project „AtlantOS“. The students are based at Universities in Brazil, South Africa, Uruguay, Argentina, Togo and Germany and the cruise is a great chance for them to gain insight into modern ocean research. They are all highly motivated and lively discussions take place not only during the daily seminar sessions.

The weather has been mostly nice, although some rainfalls have occurred, which were in particular appreciated by Karl Buhmke because he could analyse them with his distrometer and also use them as reference points for the global OceanRain project. The aim of the OceanRain project is to compare directly measured precipitation with precipitation indirectly derived from satellite data and therewith improve accuracy of the latter. These investigations are closely linked to research on the global hydrological cycle on which, in the end, our drinking water supply depends.

On sunny days the meteorologists Elisa Manzini and Marco Giorgetta from the Max-Planck Institute for Meteorology in Hamburg are especially busy as one of their duties on board is to measure the aerosol concentration of the atmosphere. Aerosols are small particles in the atmosphere like dust or salt crystals, which influence the amount of solar radiation reaching the Earth's surface. The measurements are taken with a hand-held device. These data are as well being sent to an international data base and together with data of many other observers they are combined to create a global picture. For cloudy days, like the last two, Elisa and Marco brought a ceilometer, which is used to determine the height of the cloud base. However, scientist on board the Meteor can also „look behind the clouds“ – each day at the same Greenwich mean time (GMT) Andreas Raeke from the German Weather Service launches a weather balloon. And again, the collected data directly feed into the Global Telecommunication System (GTS) and are thus available worldwide for weather forecasts. As always the RV Meteor runs smoothly and particularly the excellent maintenance of the ship and the straightforward and safe service makes everyone enthusiastic.

Regards from the South Atlantic,  
Johannes Karstensen for the cruise participants  
M124.



*Launch of a weather balloon*