

The Expedition ANT-XXV/1

Weekly Reports

[10 November 2008](#): Successful start of the expedition by good weather conditions

[17 November 2008](#): Chemical oceanography and the capture of water droplets

[24 November 2008](#): Meeting with Merian and Crossing of the Equator

[1 December 2008](#): Biology, Climate and the End of the Journey



Summary and itinerary

The first leg of the 20th campaign in the Antarctic will start in Bremerhaven on October 31st and will end in Cape Town on December 3rd 2008 with participants from 6 countries. Stops are scheduled in Rotterdam for bunkering and in Las Palmas (Canary Islands) for disembarking of some participants. Scientific instrumentation as well as the undulating instrument package Scanfish will be tested during the first period of the cruise. The scientific programme comprises chemical, biological and atmospheric investigations.

A detailed interdisciplinary study focusing on the molecular characteristics of dissolved organic matter will be performed in the Atlantic surface ocean to relate the data to different climatic, hydrographical, biological and meteorological regimes as well as to terrestrial input from riverine and atmospheric sources. In parallel, the chemical composition of aerosols will be determined. Trace elements and the flux of mercury between water and atmosphere will be continuously measured during the cruise. Another project is focused on the determination of per- and polyfluorinated compounds (PFCs) and organic fluorinated pesticides to characterize the distribution of novel PFCs in the atmosphere and sea water.

The marine carbon cycle in the surface ocean will be investigated to provide operational approaches for unattended operation. In addition to the carbon measurements, dimethylsulfide (DMS) measurements will be conducted in the surface seawaters and the atmosphere. In-situ measurements of ocean optics, phytoplankton productivity and composition and particulate organic carbon will be performed to improve estimates of global marine primary production and the distribution of major phytoplankton functional groups by using remote sensing data. Another project aims at observing both the radiation budget and the state of the atmosphere as accurate as possible to provide realistic atmosphere-radiation relationships for use in climate models and in remote sensing.