

DML precipitation regime and EPICA ice core interpretation

Valuable information about the climate of the past is stored in the large ice sheets of Greenland and Antarctica. In particular, two cores drilled in the frame of EPICA (European Project for Ice Coring in Antarctica) at Dome C and Kohnen Station, Dronning Maud Land, yielded new insights. Paleotemperature is usually derived from stable isotope ratios of ice. However, these parameters depend on the meteorological conditions during precipitation since the precipitation forms the ice we investigate. Thus it is important to know the complex atmospheric processes during precipitation formation as exactly as possible. The project investigates these processes using a mesoscale atmospheric model (AMPS/Polar WRF) as well as a comprehensive data set of stable isotope ratios and accumulation rates derived from 76 shallow firn cores in Dronning Maud Land. The project is/was carried out in close cooperation with the Norwegian Polar Research Institute, Tromsø, Norway, the National Center for Atmospheric Research (NCAR), Boulder, CO, USA, and the Alfred-Wegener-Institute for Polar and Marine Research (AWI).