Kurzfassungen der Meteorologentagung DACH,
Vol. 1, DACH2007-A-00001, 2007
Meteorologentagung DACH 2007

25 years of Polarstern meteorology

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The most important tool in Germany's polar research program is the research and supply vessel Polarstern. The owner of the ship is the Alfred Wegener Institute for Polar and Marine Research in Bremerhaven, Germany. The maiden voyage of Polarstern started at the end of 1982. Within the last 25 years Polarstern performed a total of 44 expeditions to the Arctic and Antarctic.

The home harbor from Polarstern is Bremerhaven, Germany. During summer, Polarstern usually operates in the Arctic, during winter (austral summer) in the Antarctic. The stopovers in Bremerhaven are typically during spring and autumn where most of the maintenance work gets performed. Usually, Polarstern is more than 300 days per year in operation.

Polarstern is well equipped for meteorological research as well as for routine meteorological services. The meteorological office is permanently manned with a weather technician/-observer from the German Weather Service (DWD) who performs 3-hourly synoptic observations and daily upper air soundings. Additionally, continuous measurements from a variety of nautical and meteorological parameter are available as 10-minute averages. Within the last 25 years more than 50.000 synoptic observations, 10.000 upper air soundings and 600.000 10-minute averages of nautical and meteorological data – mostly from high latitudes and meridional Atlantic cross-sections – were collected.

Within this poster these three unique datasets get presented. They complement one another. The routine 3-hourly observations give the most complete datasets including many visual observations also covering basic ice information. The upper air soundings are routinely performed at least once a day and contain all meteorological relevant vertical profile data sometimes including ozone concentrations. The continuous meteoro-

logical surface measurement – available since 1993-05-15 - offer the only continuous information.

All data are available online through the information system for Publishing Network for Geoscientific & Environmental Data **PANGAEA** (http://www.pangaea.de). Via http://www.awi.de/MET/Polarstern/ small data subsets can be selected online from the Meteorological Information System at AWI **MISAWI.** The data archiving is ongoing and includes the most recent data, see: http://www.awi.de/MET/Polarstern/psobse.html.