



## **Temperature Measurements in the Mesopause Region (around 87 km) on board of RV “Polarstern” from 54°N to 34°S (ANT XXIII/1)**

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Measurements of the hydroxyl rotational temperatures (OH\*) were taken each night by a mobile ground-based IR-Spectrometer on board of the German research vessel “Polarstern” on its cruise from Bremerhaven (53.6°N, 8.6°E) to Cape Town (34.0°S, 18.5°E) from 13 October until 17 November 2005 (ANT XXIII/1).

Temperature nightly means are analysed versus latitude and are compared to different climatologies (CIRA, MSISE90). Smaller scale temperature fluctuations are quantified versus latitude to analyse structures like systematic deviations in the data set in the different climate zones. A case study is presented showing the generation of gravity waves induced by low pressure systems over the Atlantic Ocean. Additionally other data sets like radiosonde and ozonesonde data are also analyzed in terms of smaller scale variability.

Satellite-based measurements performed with the ENVISAT-SCIAMACHY instrument are compared to the ship-based data set over different climate zones. SCIAMACHY data are therefore validated over a wide latitude range with one instrument.