



Spatial and temporal distributions of water vapour in the UTLS as observed with MIPAS/Envisat

M. Milz, H. Fischer, **M. Höpfner**, S. Kellmann, A. Linden, T. Steck, G.P. Stiller, T. von Clarmann

Universität Karlsruhe/Forschungszentrum Karlsruhe, Institut für Meteorologie und Klimaforschung, Hermann-von-Helmholtz-Pl. 1 76344 Eggenstein-Leopoldshafen, (mathias.milz@imk.fzk.de)

Water vapour is one of the most important greenhouse gases. Its distribution is highly variable in space and time. Measurements of the satellite-borne MIPAS onboard the European research satellite Envisat provide global coverage of water vapour profiles and other atmospheric state parameters. From July 2002 until March 2004 MIPAS was operated with the initial standard measurement mode which provided profiles covering a nominal altitude range from 6 to 68 km.

Retrieved distributions of water vapour, based on reprocessed ESA Level-1b spectra, covering the upper troposphere and the lower stratosphere are presented for different time periods. The distributions show latitudinal, longitudinal, and seasonal differences.

Time series for tropical measurements show an annual cycle for the lower stratospheric water vapour abundances and demonstrate upward transport of tropical airmasses entering the tropical stratosphere (tape recorder). For polar regions the subsidence of airmasses inside the vortex is visible.