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IMK/IAA retrievals of temperature and trace gases from MIPAS reduced resolution (RR) mode in support of SCOUT-O3 and AMMA campaigns

S. Chauhan (1), M. Höpfner (1), G. Stiller (1), T. von Clarmann (1), U. Grabowski (1), N. Glatthor (1), M. Milz (1), T. Steck (1), S. Kellmann (1), M. Kiefer (1), A. Linden (1), M. López-Puertas (2), B. Funke (2), H. Oelhaf (1), G. Wetzel (1), H. Fischer (1), L. Froidevaux (3), A. Lambert (3), M. L. Santee (3), M. Schwartz (3)

(1) Institut für Meteorologie und Klimaforschung, Forschungszentrum Karlsruhe, GERMANY (swarup.chauhan@imk.fzk.de/.Fax: +49 7247 824742), (2) Instituto de Astrofisica de Andalucia, SPAIN, (3) Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, USA. (lucien@mls.jpl.nasa.gov; telephone [+1]-818-354-8301; FAX [+1]-818-393-5065)

MIPAS (Michelson Interferometer for Passive Atmospheric Sounding) on Envisat is a limb sounder measuring the mid-infrared emission of the atmospheric constituents in high spectral resolution from space. Its goal is the monitoring of temperature and trace species profiles from the upper troposphere to the mesosphere with daily coverage of the earth. Additionally, it is used to detect top altitudes even of subvisual cirrus clouds. The MIPAS UTLS-1 mode which is in operation since beginning of 2005, has often been adopted for the support of field campaigns like SCOUT-O3/Darwin in November/December 2005 and AMMA in August 2006 It has a spectral resolution of 0.061 cm $^{-1}$. The horizontal distance between each limb scan is about 320 km, with 19 tangent altitudes and 1.5 km tangent point distance in the UTLS region. This oversampling is helpful to improve the vertical resolution of the atmospheric profiles in this important altitude region compared to the standard mode of MIPAS which was in operation between June 2002 and March 2004 and where the tangent point spacing has been 3 km.Temperature, H_2O, O_3 and HNO_3 altitude profiles have been retrieved with the IMK/IAA (Institut für Meteorologie und Klimaforschung/Instituto de Astrofisica de Andalucia)science-oriented data processor from MIPAS/Envisat.On a global scale the data will be intercompared with nearby orbits of MLS (Microwave Limb Sounder)

and of ECMWF-Analysis data. Locally, comparisons results from the MIPAS-balloon experiment over Tersina (Brasil) in June 2005 will be made.An overview of the broad atmospheric situation over the region of the SCOUT-O3/Darwin campaign in terms of T, H_2O, O_3, HNO_3 distributions in the UTLS and of cirrus coverage will be given.