box air mass Faktoren, berechnet durch das voll-sphärische Monte Carlo Strahlungstransport-Modell TRACY, als weighting functions angewandt werden. Der Einfluss verschiedener Parameter auf die Qualität des Profil-Retrievals sowie die Übereinstimmung mit anderen Satelliten gestützten Messungen von stratosphärischen Spurengasprofilen (SMR-ODIN, MLS-AURA) wird untersucht.

Fachvortrag

UP 26.4 Mi 15:15 E
Retrieval of mesospheric Mg/Mg⁺ from SCIAMACHY limb data
— • MARCO SCHARRINGHAUSEN1, ART C. AIKIN2, JOHN P. BURROWS3, JUSTUS NOTHOLT1, CHRISTIAN VON SAVIGNY1, NADINE WIETERS1, und MIRIAM SINNHUBER3 — 1Institut für Umweltphysik, Universität Bremen — 2The Catholic University of America, Washington DC

We present first results of trace gas retrievals from mesospheric emission signals observed in the SCIAMACHY limb measurements. Meso- spheric emission signals are observed throughout the UV and visible spectral range. We focus on measurements in the UV-C region (214 - 330 nm).

In the UV region, band emissions of molecular species (e.g. NO, OH) are observed as well as line emissions of metallic species like Mg, Fe, Na, Si and their ionized counterparts. These emissions are partly due to resonance fluorescence. In this case number densities of the ground-state can be retrieved from the observed emission signals.

A retrieval of NO and Mg/Mg⁺ assuming resonance fluorescence has been developed. First results of altitude profiles as well as monthly averaged global distributions of Mg/Mg⁺ will be presented. These are the first simultaneous observations of Mg and Mg⁺ in the mesosphere yet, neither of these species has been measured on a global scale yet before. Variations in the ratio of the two species are analysed. Concurrent retrievals of the two species provide insight into sources and sinks of mesospheric Mg/Mg⁺. Additionally, the correlation between total abundances of Mg/Mg⁺ and the solar activity is investigated.

Fachvortrag

UP 26.5 Mi 15:30 E
Tomographic retrieval of MIPAS measurements in the UTLS region
— • TILMAN STECK and MICHAEL HÖPFNER — Institut für Meteorologie und Klimaforschung, Forschungszentrum Karlsruhe, Postfach 3640, 76021 Karlsruhe, Germany

The Fourier transform spectrometer MIPAS (Michelson Interferometer for Passive Atmospheric Sounding) on Envisat measures infrared emission of the Earth’s atmosphere in a limb viewing mode. Due to the long ray path, limb sounders are sensitive to even little abundant species. However, under mesospheric conditions the retrieval of a horizontally homogeneous atmosphere is assumed.

A dedicated method of taking full 2-dimensional (2d) fields of state parameters into account is presented. The diagnostics comprise estimated random error and vertical and horizontal resolution. The method is applied to measurements of MIPAS in the special mode S6. The derived 2d ozone distribution show stratospheric intrusions into the troposphere.