



## **Retrieval of OCIO from SCIAMACHY Nadir and Limb measurements**

**S. Kühl**, J. Pukite, W. Wilms-Grabe, U. Platt, T. Wagner

Institut für Umweltphysik, Universität Heidelberg

The Scanning Imaging Absorption Spectrometer for Atmospheric Chartography (SCIAMACHY) was launched successfully onboard ENVISAT on March 1, 2002. It observes the solar radiation transmitted and backscattered from the atmosphere and reflected from the ground in nadir, limb and occultation viewing modes. Chlorinedioxide (OCIO), an important indicator for stratospheric chlorine activation, can be measured in the UV spectral range by Differential Optical Absorption Spectroscopy (DOAS). First results on the retrieval of OCIO Slant Column Densities (SCDs) from SCIAMACHY spectra are presented. The nadir SCDs of OCIO are compared to the ones derived from spectra of the Global Ozone Monitoring Experiment (GOME), which has successfully measured OCIO since 1995. SCIAMACHY operates in the same orbit, but measures approx. 30 minutes earlier than GOME. In addition, SCIAMACHY measures scattered sun radiances in limb mode, which allows to determine vertical profiles of atmospheric trace gases. First results on the retrieval of OCIO SCDs from SCIAMACHY limb spectra are presented. The influence of several parameters on the quality of the retrieval, like the spectrum chosen as Fraunhofer reference, the wavelength range chosen as fitting window or the trace gas reference spectra included in the fit, is examined. Inversion of the retrieved OCIO SCDs for the different tangent heights by optimal estimation yields vertical profiles of the OCIO concentration. The evolution of the OCIO profiles during Arctic and Antarctic winters is investigated and single profiles are compared to the OCIO SCDs from nadir mode, which probes the same airmass as the limb mode approx. 7 minutes later.