RETRIEVAL OF SCIAMACHY LIMB MEASUREMENTS: FIRST RESULTS.

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The Scanning Imaging Absorption Spectrometer for Atmospheric Chartography (SCIAMACHY) which was launched on board the European Environment Satellite (ENVISAT-1) in March 2002 is one of the newest space-borne instruments intended to improve our knowledge of the atmospheric physics and chemistry. The SCIAMACHY instrument measures the scattered and reflected spectral radiance in nadir and limb geometry and the spectral radiance transmitted through the atmosphere in solar/lunar occultation geometry in the spectral region 240 - 2380 nm.

Retrieval of SCIAMACHY measurements in limb viewing geometry will yield vertical distributions of various atmospheric trace gases in the stratosphere, upper troposphere and mesosphere with a vertical resolution of about 3 km. The first results presented in this work demonstrate a large information content of limb-viewing measurements and a high potential of the retrieval of atmospheric trace gas vertical distributions from spectra measured by the SCIAMACHY instrument. Preliminary results of vertical profile retrieval of such minor species as O₃, NO₂, BrO, and OClO in the altitude range 15 – 40 km are shown. The retrieved vertical profiles are compared to profiles derived from independent measurements as initial verification of the data quality.