

# SCIAMACHY SOLAR OCCULTATION OBSERVATIONS: RETRIEVAL METHODS AND FIRST RESULTS

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SCIAMACHY (SCanning Imaging Absorption spectroMeter for Atmospheric CHartography) has been launched onboard ENVISAT (Environmental Satellite) on March 1, 2002. The spectrometer is observing scattered, reflected, and direct radiation in the UV-Vis-IR range in three different viewing geometries: nadir, limb, and occultation.

The presentation focuses on the evaluation of the solar occultation measurements. Solar occultation is performed for each orbit during sunrise and is restricted to latitudes between 65 and 90 N. The retrieval of trace gas profiles is fairly simple in occultation viewing geometry as only attenuation of direct irradiation has to be taken into account. In principle, this is done by applying the Lambert-Beer-Law of Extinction to the observed transmissions.

Critical to the retrieval of atmospheric profiles is the ability to find the true path of the observed radiation through the atmosphere and to determine the exact pointing of SCIAMACHY's field of view on the solar disk. Once this has successfully been mapped to the corresponding reference measurement above the atmosphere, transmission spectra can be obtained by simple division. We will present retrieval methods as applied to SCIAMACHY occultation observations together with first retrieved trace gas profiles.