



## **Retrieval of cloud properties using SCIAMACHY/ENVISAT**

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The SCanning Imaging Absorption spectroMeter for Atmospheric CHartography (SCIAMACHY) is part of the atmospheric chemistry payload onboard ENVironmental SATellite (ENVISAT). SCIAMACHY is the only atmospheric chemistry sensor on ENVISAT capable of determining trace gases and aerosol abundance's in the lower troposphere including the planetary boundary layer. From SCIAMACHY nadir (and limb) measurements tropospheric columns of O<sub>3</sub>, CO, NO<sub>2</sub>, BrO, CH<sub>4</sub>, H<sub>2</sub>O, SO<sub>2</sub> and H<sub>2</sub>CO are retrieved. In cloud free regions, the tropospheric measurements of SCIAMACHY include the planetary boundary layer. In addition, surface spectral reflectance, aerosol and cloud parameters and the tropospheric flux from 280-2380 nm are retrieved. The aim of this presentation is to present recent results as derived analyzing SCIAMACHY data obtained over cloud fields. In particular, we performed the retrieval of cloud top and bottom heights, cloud thermodynamic state, cloud optical thickness, droplet effective radius, and liquid water path for the complete 3-year-long (2003-2005) dataset. Global statistical information with respect to cloud properties is presented. We also discuss novel techniques to retrieve vertical profiles of cloud liquid water content and droplet effective radius using highly resolved spectral information as obtained by SCIAMACHY. The synergy with other instruments on ENVISAT such as MERIS and AATSR on ENVISAT is explored.