



## **Spectral Soft Calibration for use in Conjunction with an Optimal Estimation based Approach to Retrieve Polar Stratospheric Ozone Profiles from SCIAMACHY UV Measurements in the Hartley and Huggins Band**

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Stratospheric profile retrieval of ozone in the Hartley-Huggins band in nadir viewing geometry is one of very few options of obtaining a far-reaching timeseries of ozone profiles. The underlying optimal estimation approach coupled with the specific O<sub>3</sub> absorption spectrum in the UV wavelength region lead to the need for a very exact spectral calibration. SCIAMACHY (Scanning Imaging Absorption Spectrometer for Atmospheric ChartographY) launched on ENVISAT in March 2002 measures sunlight, transmitted, reflected and scattered by the earth atmosphere or surface (240 nm - 2380 nm) in both nadir and limb viewing geometry. With its long lifetime of close to 10 years and its overlap with both GOME on ERS-2 and GOME II on MetOp it is a good candidate for the start of such a long time series. In order to counter instrument dependant effects and degradation a spectral calibration is necessary. In this study a possible method for in-flight calibration by means of comparison of measured and simulated reflectance spectra will be shown. The basis for simulated spectra are reference regions over various latitudes with simulations carried out with SCIATRAN. Such an instrument independant calibration technique can improve the comparability of datasets from different instruments. Particularly in challenging geometry settings such an in-flight calibration is vital to achieve good results. The relevance of such an in-flight calibration for retrieved O<sub>3</sub> profiles will also be shown.