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Tropical upper tropospheric ozone volume mixing ratios retrieved using the cloud slicing method on SCIAMACHY and GOME-2 data

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The Scanning Imaging Absorption Spectrometer for Atmospheric CHartographY (SCIAMACHY on board ENVISAT, 2002-2012) and the Global Ozone Monitoring Experiment-2 (GOME-2 on board MetOp-A, 2006-now) detect ozone columns and cloud parameters in the atmosphere.
Total ozone is retrieved at IUP using the weighting function DOAS [Coldewey-Egbers et al., 2005, Weber et al., 2005]. Information about cloud characteristics (cloud fraction and cloud top height) are retrieved from the oxygen A-band [Koeleeijer et al., 2001; Kokhanovsky et al., 2005]. We use these values to retrieve tropical upper tropospheric ozone volume mixing ratios. The cloud slicing method developed by Ziemke [2001] has been adopted for this task.
The retrieval code will later operationally be used for measurements of the TROPOspheric Monitoring Instrument (TROPOMI) on board the Sentinel-5 precursor (S5P), which is expected to be launched in 2015.
Here we present first results and discuss the strengths of the method. We will further estimate the limitations with respect to parameter choice and time/spatial resolution, which strongly depends on the instrument characteristics being used.