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Tropical Upper Tropospheric Ozone Volume Mixing Ratios Retrieved with the Cloud Slicing Method using SCIATRAN/GOME2 data: Methodology, Results, and Verification

K.-U. Eichmann, M. Weber, E. Leventidou, and J.P. Burrows
University of Bremen, Institute of Environmental Physics, Germany (eichmann@uni-bremen.de)

Ozone and cloud parameters (cloud fraction and cloud top height) were used to calculate ozone volume mixing ratios in the tropical upper troposphere with the cloud slicing method [Ziemke, 2001]. The retrieval algorithm S5P_TROPOZ_CSA will be used in the operational processing of the TROPOspheric Monitoring Instrument (TROPOMI) on board the Sentinel 5 precursor (S5-P), which is expected to be launched in the middle of 2016.

The method will be presented and results from SCIAMACHY/GOME-2 shown. Two retrieval schemes for ozone are available. Total ozone from WFDOAS [Coldewey-Egbers et al., 2005, Weber et al., 2005] of IUP Bremen and the operational ESA products for SCIAMACHY/ Envisat (2002-2012) and GOME-2/ MetOpA (2007-2015) measurements are used as input for the tropospheric ozone calculations and the results will be compared. Furthermore the tropospheric ozone dataset is verified using ozone sonde data from tropical stations.