



Total and Tropospheric ozone columns from S5P

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In October 2017 the Sentinel-5P (S5P) was launched into space. The total ozone data of the TROPOspheric Monitoring Instrument (TROPOMI) on S5P are retrieved in near-real-time using the well established DOAS approach, and a subsequent conversion of the retrieved slant column densities into vertical column densities using an iterative air mass factor calculation. This algorithm has already been successfully applied to the previous missions GOME, SCIAMACHY and GOME-2. However, the high resolution of S5P requires a more sophisticated cloud product and the ozone algorithm is adapted to the new cloud model.

Besides the total column, a tropospheric ozone column is also included in the official ozone data products. The cloud convective differential method is used to separate the tropospheric and stratospheric ozone column. Deep convective clouds shield the tropospheric ozone from the satellite based observers. Therefore the ozone columns above deep convective clouds are good approximations of the stratospheric ozone column. These data are corrected for the variety in the cloud top altitudes and averaged over a 5 days time period and a clean area. In a last step the stratospheric column are subtracted from the total ozone columns for cloud free observations.

After a short introduction to the algorithms, the first results will be presented for both tropospheric and total ozone. First comparisons to similar data based on GOME-2 on MetOp A&B observations look very good, initial validation results using ground-based or sonde data will be presented