Total Column Water Vapour Results from Sentinel 5P datasets using the AMC-DOAS method

Tobias Küchler
(IUP)

Abstract

Water vapour has a very strong impact on the energy budget of the Earths atmosphere in different manner. It acts as a greenhouse gas trapping thermal energy in our atmosphere. But it also allows the formation of clouds which reflect much of incoming solar radiation. It also plays a key role in the hydrologic cycle. Changes in the amount of water water vapour will have an effect on these processes. With the new satellite Sentinel 5P it is possible to extend spaceborne observations of total column of water vapour.

The Air Mass Corrected Differential Optical Absorption Spectroscopy (AMC-DOAS) approach to derive global water vapour vertical columns was originally developed for Global Ozone Monitoring Experiment (GOME) on ERS-2, but has been applied also to measurements of the SCIAMACHY instrument on ENVISAT and the GOME-2 instruments on METOP-A and METOP-B. An application of the AMC-DOAS method to TROPOMI data on Sentinel-5P is currently under development.

First results of the results will be shown. These include comparisons to independent datasets to assess the quality of the derived datasets.