



Comparison of SCIAMACHY water vapour column observations with radiosonde measurements over Europe

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Water vapour is a significant constituent in the atmosphere and one of the most abundant trace gases in the troposphere. It plays an important role in weather and climate which is influenced by the variation of water vapour concentrations, and contributes in part to the atmosphere's radiation budget.

The latest processor update of the SCanning Imaging Absorption spectroMeter for Atmospheric CHartography (SCIAMACHY) instrument onboard ENVISAT has several improvements and additional products since its previous version. SCIAMACHY version 5.01 now provides an additional product of total column water vapour measurements. These water vapour column amounts derived from nadir measurements are retrieved by the AMC-DOAS (Air Mass Corrected Differential Optical Absorption Spectroscopy) approach, which has the ability to retrieve water vapour column amounts over land and during partly cloudy scenes.

SCIAMACHY water vapour column measurements are compared to integrated water vapour column amounts from radiosondes for various collocated sites over Europe for a number of years. The comparisons results are investigated with respect to the varying radiosonde launch locations and cloud properties.

Preliminary results indicate that SCIAMACHY measurement amounts compare well with radiosonde integrated water vapour amounts. However, under cloudy conditions SCIAMACHY slightly underestimates the amount of total water vapour.