



Time series of water vapor in the upper troposphere and lower stratosphere from SCIAMACHY limb measurements

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The global distribution of water vapor in the atmosphere is an important variable of the Earth climate. Limb measurements of scattered solar radiation in the near infrared spectral range from the Scanning Imaging Absorption Spectrometer for Atmospheric Chartography (SCIAMACHY) aboard Envisat are used to retrieve water vapor.

The retrieved data cover an altitude range of about 12 to 23 km with a vertical resolution between 2 and 6 km. This provides a global view into the upper troposphere and lower stratosphere (UTLS), a region of special interest for a variety of dynamical and chemical processes in the atmosphere.

SCIAMACHY measurements are ongoing and started in 2002. Within the SHARP-WV project we are working on the retrieval of water vapor over the complete measurement period of SCIAMACHY, to get a long data series and a dense coverage within the UTLS. The retrieval is computational expensive, therefore at first only every seventh day is evaluated.

Here, we compare the SCIAMACHY water vapor observations with ACE-FTS, MIPAS, MLS and in situ measurements and present a global time series of water vapor in the UTLS from 2003-2009.