



The MPIC/DLR "climate" water vapour product: A consistent time-series of H₂O columns from GOME/SCIAMACHY/GOME-2

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The MPIC/DLR "climate" water vapour product, developed within ESA's "GOME Evolution" project, provides a consistent time series of monthly mean H₂O columns from the satellite instruments GOME, SCIAMACHY, and GOME-2 (Metop-A).

Consistency amongst the different instruments (including cloud treatment) is substantially improved by (1) merging SCIAMACHY and GOME-2 observations to GOME pixel size, and (2) reducing the GOME-2 swath width to GOME/SCIAMACHY swath, thereby mimicking GOME-like observation conditions for all three sensors.

Here we

- provide the details of the "climate" algorithm,
- demonstrate the improved agreement gained by consistent pixel size and swath,
- discuss reasons for remaining biases between the different instruments and provide strategies for the quantification and correction of these biases during overlap periods, and
- present some first results of the climate H₂O product, covering two decades of H₂O VCDs globally.