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A multi-year tropospheric ozone dataset derived from assimilated ozone profiles

J.C.A. van Peet and R.J. van der A

KNMI, Netherlands (peet@knmi.nl)

A multi-year time series of ozone profiles has been produced from the nadir looking UV-VIS instruments GOME-2 and OMI. This dataset has been assimilated into the chemical transport model TM5 using a sequential Kalman filter approach. Before the data assimilation, a bias correction based on validation with ozone sondes has been applied to the retrieved profiles. The difference in instrument sensitivity is taken into account by incorporating the averaging kernel matrix and covariance matrix into the observation operator. The resulting assimilated dataset combines the advantages of both the measurements and the model approach: global coverage with a high vertical and temporal resolution. Therefore, the assimilated dataset is very well suited for the study of tropospheric ozone. In our presentation we will show results for the validation and time series development of tropospheric ozone, derived from the assimilated ozone profile dataset.