Atmos. Chem. Phys. Discuss., 6, S1688–S1689, 2006
www.atmos-chem-phys-discuss.net/6/S1688/2006/

Atmospheric Chemistry and Physics Discussions

Interactive comment on "Differences between ground Dobson, Brewer and satellite TOMS-8, GOME-WFDOAS total ozone observations at Hradec Kralove, Czech" *by* K. Vanicek

K. Vanicek

Received and published: 11 July 2006

Author Comment on the RC S1655

The a priory presumption of the random nature of the missing data really does not cover cases when Dobson observations were not be taken because of a bad weather condition - usually due to rain or heavy clouds associated with frontal systems. In mid latitudes (Hradec Kralove) passing of northern cold fronts is usually associated with penetration of the ozone reach sub-arctic air masses that significantly influence total ozone values, mainly in the winter/spring season. If observations are not performed on these days then calculation of monthly averages includes a deterministic component in estimation of monthly means that can be hardly eliminated for Dobson measurements.

This problem can be better investigated by application of the Monte-Carlo method on long-term data series of Brewer or satellite observations as they cover almost all days in the year.

The SO2 correction factor was not used in the analyses of Dobson-Brewer differences given in the paper as it could eliminate real differences caused by other factors. Komhyr et Evans (1980) and De Backer and De Muer (1991) assumed that total SO2 was the major local factor that could decrease accuracy of Dobson observations taken with well calibrated instruments. But this assumption was not confirmed by simultaneous Dobson/Brewer measurements taken in locations with low SO2 emissions (including Hradec Kralove since the mid nineties) where a significant seasonal courses of differences have been found and attributed mainly to the influence of TOeff on the ozone cross sections...

Technical corrections I fully accept these comments and will properly adjust the manuscript.

Interactive comment on Atmos. Chem. Phys. Discuss., 6, 5839, 2006.