

Interactive comment on “A novel tropopause-related climatology of ozone profiles” by V. F. Sofieva et al.

J. Bak

sunnypark@pusan.ac.kr

Received and published: 10 September 2013

1) I think that it is useful to refer to “Improvement of OMI ozone profile retrievals in the UTLS by the use of a tropopause-based ozone profile climatology” published in AMT [<http://www.atmos-meas-tech.net/6/2239/2013/amt-6-2239-2013.html>] because this paper also developed ozone profile climatology using tropopause height information used as a priori in OMI ozone profile retrievals and validated the use of Tropopause-Based (TB) climatology by comparing ozone profile retrievals with ozonesonde and meteorological variables such as thermal tropopause and potential vorticity. Also you need to mention similarities and differences between two TB climatologies. Especially, I am curious about the motivation why you develop TB climatology

C6732

in such way that the tropopause height is used to classify total ozone dependent climatology, not in such way that the tropopause height is used to redistribute ozone profiles relative to the tropopause height as of previous studies [Logan (1999), Wang et al. (2006), Thouret et al. (2006), Wei et al. (2010)].

2) You can emphasize on the higher accuracy of ML climatology above 6 hPa by mentioning the results of comparisons between OMI (with LLM and ML climatologies, respectively) and MLS ozone profiles (Fig. 3 and Fig. 7) in “Evaluation of ozone profile and tropospheric ozone retrievals from GEMS and OMI spectra” published in AMT.

3) How about showing the structure of OMI ozone profile retrievals in the UTLS region (orbit 6704) like Figure 5 or Figure 6 of “Improvement of OMI ozone profile retrievals in the UTLS by the use of a tropopause-based ozone profile climatology”. It is easier to emphasize on how the use of dynamical dependent climatology improves the UTLS ozone profile retrievals, horizontally as well as vertically.

4) I am confused about the way to use this climatology. For example for January and 10N-20N, there are two groups (16, 17 km) for tropopause height. If the local tropopause is 16.5 km, the ozone profile should be “ozone profile of 16 km x 0.5 + ozone profile of 17 km x 0.5” ?

Interactive comment on Atmos. Chem. Phys. Discuss., 13, 21345, 2013.

C6733