

Interactive comment on “Assimilation of stratospheric and mesospheric temperatures from MLS and SABER into a global NWP model” by K. W. Hoppel et al.

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This is a brief comment to Section 3.3 "SABER data" and to using the SABER temperatures in the work. Actually, the temperature differences between the V1.06 and V1.07 of SABER data are larger than it is written in the paper. Depending on the temperature profile the difference in the mesopause temperature can reach 10 K value (see Fig. 3 in Kutepov et al., 2006). Moreover, the mesopause altitude experiences up to 3 km shifting due to the hydrostatics effects with an updated temperature profile.

The difference between the V1.06 and V1.07 temperatures is due to neglecting the vibrational-vibrational energy exchanges among the CO₂ isotopes in V1.06. Proper

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accounting for these processes in V1.07 (Kutepov et al., 2006) affects about one eighth of the retrievals (latitudes above 40N and below 40S in three summer months in each hemisphere). The altitude where the effect becomes noticeable is around 70 km so it will not lead to dramatic changes in the results of the paper since the upper limit of the assimilated data is 75 km. However, we would recommend using V1.07 of SABER data that is publicly available at <ftp://saber.gats-inc.com> since November 2007.

In addition, the work of Mlynczak et al., 2007 that is quoted in respect to V1.07 temperatures is devoted to the 1.27 μm O₂ airglow emission interpretation and the approach described there is not related to temperature retrievals from the 15 μm CO₂ channel.

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