

***Interactive comment on “Improvement of OMI ozone profile retrievals in the upper troposphere and lower stratosphere by the use of a tropopause-based ozone profile climatology” by J. Bak et al.***

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Response to earlier reviewer comments were very complete. Can a summary of that material be provided to the general readership?

Earlier questions from the reviewer:

Much of the improvement comes from the better A Priori (Figure 6). How much do the averaging kernels change between TB, AB and LLM (Figure 8)? What are the biases

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for the A Prioris for these stations? Were the sondes used in these comparisons used in constructing the A Priori statistics? How much information does the Tropopause Pressure bring in without a measurement?

How was the non-stationarity of the sonde data set handled? There are trends in both tropospheric and stratospheric ozone over this time period.

How do posed regime shifts influence/interact with the authors' categorization of air masses? See literature by Fusco and Salby, Hood et al., and Hudson et al. (E.g, Hudson et al.: The total ozone field separated into meteorological regimes. Part I: Defining the regimes, J. Atmos. Sci., 60, 1669–1677, 2003. and references therein.)

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