

Interactive comment on “Model-based Climatology of Diurnal Variability in Stratospheric Ozone as a Data Analysis Tool” by Stacey M. Frith et al.

Anonymous Referee #2

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Review of:

Model-based Climatology of Diurnal Variability in Stratospheric Ozone as a Data Analysis Tool Stacey M. Frith¹, Pawan K. Bhartia², Luke D. Oman², Natalya A. Kramarova², Richard D. McPeters², Gordon J. Labow

The study is very detailed, and the results are convincing and new. For the first time, the authors demonstrate a feasible way how the effects of the diurnal ozone cycle in satellite and ground observations can be considered and partly removed. Thus, the article is of high interest for the readers of AMT. Future application of a related analysis to other diurnal cycles in other atmospheric parameters might be possible.

I only found minor corrections which are listed below, and I have one question: I would

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be interested in the dependence of the diurnal cycle on longitude. Did you investigate if topography, convection or land-sea contrast have an influence on the diurnal cycle in the simulation data? Maybe you can add 1-2 sentences about this topic to your article.

p.1, line 15 what is the meaning of GEOS-GMI? p.2, line 4 Rowland instead of Roland
p.2, line 27 plural? Satellite data provide . . . p.4, line 15 0.01 hPa instead of .01 hPa
p.4, line 20 please inform how the midnight value is defined, e.g., 23:00-1:00 p.8, line 10 why did you change to the daily mean as reference? p.8, line 19 . . . measured by the satellite instruments. p.11, line 3 line of sight? p. 14, line 2 . . . because no observational data source . . . ? p. 14, line 14 The sentence is not so clear. Perhaps "transits" instead of "transition"?

Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2019-320, 2019.

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