

Interactive comment on “TROPOMI/S5ptotal ozone column data: global ground-based validation & consistency with other satellite missions” by Katerina Garane et al.

Anonymous Referee #1

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Overall, this paper is well thought out and well written. The analysis is thorough and the conclusions are easily understood. There is one major concern/issue that this reviewer believes that would possibly strengthen this paper: The comparisons of TropOMI to the column ozone measurements from other satellites are done using the Dobson and Brewer station locations as the comparison points. Why? The advantage of a satellite is that one has global coverage so why not compare 5 or 10 degree zonal means?? The authors should show the latitudinal differences (like figs 13 & 15) as well as a few latitudes of time series (figs 12 & 14) and that will avoid the missing southern hemisphere issue with the Brewer network. The time series at the higher latitudes should show some interesting differences that would strengthen your point about albedo effects and

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other differences in a prioris. Once those more robust comparisons are shown, the paper is ready for publication.

A few minor corrections: OMPS is misspelled in several places (as OPMS)

Page 2 Line 25- local 'equatorial' overpass time (add equatorial) Page 3 line 11- remove commas Page 3 line 18- Define GDP Page 4 Line 1- remove 'here' Page 5 line 24- add 'spectrometer' after double Page 6 line 9- remove 'at the most' Page 7 line 10- remove 'available in the specific database' Page 7 line 10- remove 'so far typically applied' Page 8 Line 3- no obvious 'increase in' variability Figure 1: shouldn't the y-axis label be "Standard Deviation (%)"? Figure 5: can an ozone scale be put on this to show the natural variability of ozone in the observation region? Page 12 line 13- remove 'presented' Page 12 line 19- change maybe to may be Page 15 lines 12-15. Why do I not see this high latitude deviation in figure 7 b & d? Page 19 line 10- remove 'either' Sections 4.1 & 4.2 should be re-done to show satellite to satellite differences directly (see comment at beginning) Page 25- lines 7-10 This sentence is awkward and needs to be more clearly written. Page 25 line 28- remove 'utterly'

Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2019-147, 2019.

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