

**Referee report to “Tomographic retrievals of ozone with the OMPS Limb Profiler: algorithm description and preliminary results” by D. Zawada et al.**

I appreciate the efforts made by the authors to address the remaining major issues in an appropriate way. With respect to the newly written/changed parts of the text there are still a couple of minor issues/technical corrections need to be addressed. My detailed comments are listed below. I recommend to accept the paper for publishing in AMT after the listed issues have been addressed.

**Minor comments:**

Page 20, lines 15-16: “..., which are expected as measurements from OMPS-LP consist of purely stratospheric air while measurements from MLS are a combination of stratospheric and tropospheric air.” → it is unclear how the statement is justified and if it is correct. Do you mean a different sensitivity to clouds, differences in the vertical resolution or something else? The statement needs to be explained in more details or deleted.

Page 20, lines 16-18: “Above 45 km OMPS-LP is low relative to MLS, which is explained through the diurnal cycle of upper stratospheric ozone. OMPS-LP measures during the day, catching only the low part of the cycle, while MLS measures both day and night.” → With this statements authors might give the reader an impression that they do not know, that day- and nighttime measurements should be considered separately when performing comparisons for photochemically active species. As the author team has an extensive experience in the retrieval and validation I am sure this is not a lack of understanding but is done just for a sake of simplicity, as this comparison is rather outside the main focus of the paper. Generally, I would agree with this strategy if the authors stated clearly that they recognize the comparison is “quick and dirty” at this point but they think it is unnecessary to do more efforts. This can be done, for example by replacing the last two sentences of the section by ”The comparison results above 45 km are not representative, as both day- and nighttime measurements of MLS are used to calculate the monthly zonal mean values, which is inappropriate when the diurnal variation of ozone becomes significant.“

**Technical corrections:**

Page 6, lines 23-24: “To verify that convergence has been reached, at every iteration both the current  $\chi^2$  value and the expected  $\chi^2$  value at the next step assuming the problem is linear.” → the sentence seems to be incomplete.

Page 14, lines 15-16: “At the end of the retrieval are near identical to unity with peak values of 0.99 in the worst case.” → noun is missing.