

The manuscript deals with the validation of nadir (partial) ozone profiles from 10 years of OMI data using balloon soundings. The quality and limitations of the products are well described showing the results of various tests and for different conditions.

#### General comments:

To me it would have made the narrative order more logic to first read about the tests on SZA, cloud fraction and cross-track position dependence before presenting the results of the final dataset resulting from the selected criteria (i.e. move section 4.1.1 to 4.1.4).

Please mention version numbers throughout the text ('current', 'updated', etcetera are confusing).

#### Specific/technical comments:

References to Huang e.a., 2016: I am not sure if you can specify 2016 if it is not yet published in ACP discussions.

Page 5 line 105: remove second 'in' (.. retrieval errors in in the range..).

Page 9 line 215: there seems to be a space missing in '2009and'

Page 9 line 219, second criterion: rephrase, now it appear to be a contradiction that you select rows 4-27 but state that these have a worse quality and larger footprint as that is what this selection is avoiding.

Page 11 line 295 remove the second (double) comma after the first use of OMI

Page 12 line 311 add 'above' to "~30 km"

Page 12 lines 319-310. Why do you not use median/percentile values to deal with outliers?

Page 13 line 343: second troposphere should be stratosphere

Page 13 lines 347-348: '.. differences .. can be reduced ..'. Unclear phrasing, do you mean that this could be an improvement in a future version or do you apply it here?

Page 14 line 389: underestimate → underestimates

Page 15 lines 400-401: I find it strange to read 'best agreement .. (except for the MBs) ..'. Given that the MBs are not closer to zero at all altitudes in the NH summer, please consider rephrasing 'best' (also in the conclusions section).

Page 15 lines 407-410: Please clarify that you are referring to SDs only here: the non NH summer seasons show improvements in MBs over the a priori only above the 3-4 lowermost layers (not 2-3). Also, the statement on the NH summer season improvements 'at all tropospheric layers except for the bottom one' is not valid for the MBs.

Page 17 line 462: I guess you mean stripping instead of stripping 😊

Section 4.2.1 What pressure/altitude border do you use? How large is the contribution of the assumed profile above the burst altitude?

Page 19 line 513: missing space in '1-3%except'

Page 20 lines 546-547: why only at New Delhi, as Trivandrum also uses Indian sonde? What about the SD at Poona?

Page 20 line 549: 'no much' → 'little' or 'not much'

Page 21 lines 590-591: add references for this statement.

Page 24 line 664: 'the comparison is seasonally dependent'. Rephrase (the results may depend on season but the comparison shouldn't)

Figures 3 and 4: Label of the x-axis states 'A proiri' → A priori

Figure 3 (d, f, h): explain why sometimes the pre-/post RA number of collocations used (N) does not sum to the N for the full period (c, e, g).

Figure 6: the colour bars are distinct from similar figures (5 and 7) – esthetic, not a real problem 😊

Figures 8 to 12: these figures are quite fuzzy in the pdf, especially when zooming in to see the (colour of the) small dots – please check the figures' resolution for the final publication.

Figure 10: Consider that red versus green can be confusing for the colour blind. You might want to extend or shorten the vertical axis so that you get rid of the overlap between 0 and 80 DU.

Figure 11 caption states 'same as Figure 9' and Figure 12 caption states 'same as Figure 8'. Since the figures' setup refer to subsets and have a different orientation, I would rephrase this.

Figure 12 caption: is this for the full time series as for Figure 11?

Figure 12a states '30N-60 N JJA only' in the figure whereas it should be '30N-60N all year'.

Figure 13 caption: state use of AVK

Figure 14b: for consistency with 14a add the years to the numeric information on the trends in the figure?