

Atmos. Meas. Tech. Discuss., referee comment RC2
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Comment on amt-2021-17

Anonymous Referee #1

Referee comment on "Rethinking the correction for absorbing aerosols in the OMI- and TROPOMI-like surface UV algorithms" by Antti Arola et al., Atmos. Meas. Tech. Discuss., <https://doi.org/10.5194/amt-2021-17-RC2>, 2021

General Comments

The manuscript proposes an improved algorithm to better account for the impacts of absorbing aerosols in OMI/TROPOMI surface UV products. This proposed scheme can be easily implemented to correct the systematic effects caused by SZA and AAOD in the current OMI operational surface UV algorithm. This paper is interesting and well written.

- It seems that the correction algorithm developed in this work is targeting OMI and TROPOMI satellites, it would be helpful to add this information in the title of the manuscript.
- How applicable is this proposed algorithm to be used in other satellite derived surface UV products? It would be helpful to add some comments on this.
- Line 64-67: Here could discuss a little bit on what the surface UV estimates would be without accounting for the SZA dependence and the non-linearity in the correction scheme, such as whether they would be systematically overestimated or underestimated compared to the current operational algorithm.
- Line 98-99: how are the new aerosol climatology data different from the current climatology data? How is it going to affect the results?
- Section 2 has a lot of texts and it is hard to go through. It would be helpful for the readers to read through it if it can be better organized such as showing a flowchart of the algorithm or reorganizing some of the long paragraphs.
- Line 228-229: It would be interesting to see the plots in other months.
- Line 35: a reference is needed here.