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Atmospheric Measurement Techniques Discussions

Interactive comment on "The AERONET Version 3 aerosol retrieval algorithm, associated uncertainties and comparisons to Version 2" *by* A. Sinyuk et al.

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The AERONET Version 3 aerosol retrieval algorithm, associated uncertainties and comparisons to Version 2" by A. Sinyuk et al.

Reply to reviewer #5.

The authors would like to thank the reviewer for carefully reading the manuscript and valuable comments.

Comments:

1. As noted by reviewer #4 that the results need a deeper discussion, however, the

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paper is already long. Reviewer #4 suggests splitting the paper into two parts, the description on the algorithm and the evaluation of uncertainties. In general, I see the merit in this suggestion. I would add that the authors should consider the use of appendices for more detailed discussions. Doing this could improve the readability of the paper without compromising the level of detail for the 'expert' reader.

Answer:

The main objective of this paper is to present a description of V3 AERONET aerosol retrieval algorithm including all the changes and new additions. In this respect, the estimation of retrieval uncertainties is a part of the V3 aerosol retrieval algorithm and should be a part of this manuscript rather than a separate publication. We understand that combining all the parts of V3 aerosol retrieval algorithm in one manuscript does not allow for discussion of every detail and nuance. However, we did our best to provide a reasonable number of details in describing each part of the algorithm. It might well happen that during further research some more details of uncertainty estimates and other parts of the V3 algorithms may be included in future publications. At this point, however, we believe that separation of the manuscript in two parts is not appropriate.

2. Reviewer 4 also makes points out the shortcomings in the scatter plots i.e. when so many points are plotted all it results in a 'blob' being produced and the information as to the number of observations represented is lost. I strongly agree with Reviewer 4's recommendation regarding this point.

Answer:

All the scatter plots with large number of points were replotted according to the recommendation, see example below.

(see supplement

Please also note the supplement to this comment:

https://www.atmos-meas-tech-discuss.net/amt-2019-474/amt-2019-474-AC5-supplement.pdf

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