

## ***Interactive comment on “Evaluation of the MERIS aerosol product over land with AERONET” by J. Vidot et al.***

**J. Vidot et al.**

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Response to the general comment: The improvement between the 2nd algorithm compared to the 1st algorithm is given Table4 for the retrieval in the blue. It is represented by 3 effects: - The increase of the correlation coefficient from 0.72 (1st Proc.) to 0.83 (2nd Proc.) - The value of the slope that comes closer to the 1:1 line (0.73 for the 1st Proc. and 1.05 for the 2nd Proc.) - The decrease of the root mean squared error (rmse) from 0.271 (1st Proc.) to 0.2 (2nd Proc.). Concerning the red, no comparison has been given in the paper between both algorithms because of the weakness of the retrieval in the red. By considering a new set of aerosol optical properties (IOPA), no large improvements have been found for retrievals in red and blue, and between both algorithms. The weak improvements explain that the main uncertainties comes from the surface reflectance, and especially in the red.

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Specific comments: It is impossible to provide the percentage of DDV and LARS we used. Match-ups have been selected considering at least 10 LARS pixels on a 10 by 10 square over AERONET sites.

The huge discrepancy between numbers of points within each biome is independent of our wish. It is mainly due to the fact that some of biomes are mostly covered by snow or desert (no DDV or LARS), neither good AERONET data neither MERIS images. Table 2 and 3 are given to show the difference of correlation between biomes and the effect of the sigma filter. We then have worked on the entire dataset (with sigma filter) instead of sub dataset per biome in the rest of the paper.

From our point of view, we think that users should use the sigma filter because the filter increase the correlation for most biomes, but this filter is not the best since we still have problems with cloud contaminations.

We will clearly indicate which version of the algorithm is the best in the conclusion in the final version of the paper.

We agree with referee #3 about the fact that it will be interesting to compare IOPA models with other aerosols models (as those for MODIS), but that is beyond the scope of the paper.

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