

***Interactive comment on “The inter-comparison of major satellite aerosol retrieval algorithms using simulated intensity and polarization characteristics of reflected light” by A. A. Kokhanovsky et al.***

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1. We tried to homogenize the writing of different parts and invested a lot of time in this. 2. For MODIS, we mention all bands because this paper actually may be used for a wider range of applications. 3. For MODIS over land retrievals only wavelengths in the range 443-670nm are used. This has been added to the caption to Fig.13a. The retrievals over ocean have been performed in the spectral range 0.4-2.2  $\mu$ m. We incorporated the MODIS over ocean retrievals in the corresponding figures and removed

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Fig.10. 4. We removed the reference to GLORY from the table. 5. We deleted section 4.6 and pasted the correspondent text in the beginning of Section 5. 6. Now we write in all relevant captions that the MODIS algorithms over land and ocean surfaces were used. The algorithms differ considerably. 7. The results for NASB-1 and NASB-2 differ just due to different phase functions. We have added the respective comment to the caption. The algorithm stays the same. 8. The list of acronyms was extended. 9. As said by the reviewer, section 5 is the most important section and we prefer to leave as it is. The section is long because we want to have an extended description of results. We think that the results for each instrument need to be deeply discussed and the corresponding limitations to be addressed. The beginning of the section points out the most important results and we think it's "striking" enough. 10. The symbol signification can not be repeated in figures 11 and 12 due to lack of space. This problem will disappear in the final journal version, however. These figures will be on the same page with those with the symbol signification. 11. MISR PSI retrievals are not shown due to problems of this algorithm for large AOT. 12. The absolute error is most suitable for assessing the error of satellite retrievals. The relative error behaves in various ways depending on the algorithm and range of AOT. This error can be easily assessed from the figures. For instance, it remains constant at AOT=0.1-0.5 for MERIS/ NASB-2 result. The meaning of solid lines is given in the caption of the revised paper. They give the range of estimated error of the MODIS over ocean retrieval algorithm. 13. The meaning of pink line in Fig.13a is given in the caption to this figure (see the last line). 14. The captions to Figs. 15-17 are extended in the final version.

We are grateful to the reviewer for useful comments.

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