

Interactive
Comment

Interactive comment on “MODIS 3 km aerosol product: algorithm and global perspective” by L. A. Remer et al.

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The same comments we made to Dr Wang apply here. Because the algorithm was changed from the original analysis every figure has been re-done using the new test data, and figures and tables will not match the original AMTD version of this paper. However, the main results are the same.

We would like to thank the reviewer for his/her review and the suggestion of a direct pixel-by-pixel comparison of the 3 km and 10 km products, with scatterplots and statistics of collocations. The main point concerning the reviewer is the question of whether retrieval differences or sampling differences are causing the differences seen in the global statistics of the two resolutions.

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Interactive Discussion

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We decided to address this issue by creating a new Figure 11 that illustrates regionally the differences in the two products. The figure shows both the difference when the two products co-exist in a single 10 x 10 latitude-longitude grid square, and also the new grid squares that are introduced by moving to a finer resolution product. The short answer is that both retrieval differences and sampling differences count. In the new Figure 11 that was designed to highlight the retrieval differences by accentuating outliers, we see broad regions in the summer hemisphere with large AOD differences. We also see entire regions filling in with retrievals by using a finer resolution product.

We chose not to collocate and run scatterplots because we felt that an analysis like Figure 11 is much more informative. It answers the main question posed by the reviewer while retaining the spatial structure of the differences that had not been addressed in any of the other figures. To us Figure 11 succeeds in killing two birds with one stone.

We have changed all the 2.13 μm to 2.1 μm .

We would also like to thank the reviewer for his/her patience in waiting for us to re-submit the manuscript after the initial review.

Interactive comment on Atmos. Meas. Tech. Discuss., 6, 69, 2013.

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