

Interactive comment on “New approach to the retrieval of AOD and its uncertainty from MISR observations over dark water” by Marcin L. Witek et al.

Anonymous Referee #3

Received and published: 21 September 2017

This manuscript details a new method to retrieve AOD and pixel-level AOD uncertainty from the Multi-angle Imaging SpectroRadiometer. The manuscript is well-written, and it is likely that this new method will serve the MISR aerosol community well in the future. However, I can not support publication of this work without at least a cursory attempt at validation, which this paper is sorely missing.

Major Comment: Although I believe that this new method probably represents a substantial improvement for aerosol remote sensing from MISR, it is incumbent on the authors to prove this. The authors claim that not all sources of error are included, therefore no comparison of the AOD differences and pixel-level uncertainties (against

C1

MAN or AERONET, for instance) should be done. If this new method is going to be implemented in the next version of the MISR aerosol retrieval algorithm (and going to be published here), it should be validated first. A comparison of new algorithm results with old algorithm results does not replace real validation.

Minor Comment:

The authors mention (5 times) that several of the thresholds from the current version of the MISR aerosol retrieval algorithm are arbitrary. Please refrain from so much hyperbole in the manuscript, as most empirical thresholds could be considered arbitrary (including your own ARCI threshold).

Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2017-289, 2017.

C2