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Interactive comment on "Updated MISR Over-Water Research Aerosol Retrieval Algorithm Part 2: A Multi- Angle Aerosol Retrieval Algorithm for Shallow, Turbid, Oligotrophic, and Eutrophic Waters" *by* James A. Limbacher and Ralph A. Kahn

Anonymous Referee #3

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The Authors present an approach to derive atmospheric and ocean color products using MISR in optically complex environments. Overall, I found the manuscript to be well written and compelling. The work builds on the Authors' previous studies, but in a meaningful way – that is, it provides a solid next step and advances the field. This manuscript meets the significance and scientific / presentation quality criteria to be published in the AMT discussion forum.

Several minor issues caught my eye while reading the manuscript.

Specific comments:

Page 2, Lines 1-3: Recommend adding a transition statement between the first two sentences. Not all readers will understand the second and third sentences without some context regarding the use of ocean color satellite instruments to study ocean productivity.

Page 2, Line 11: "local" 10:30 AM equator crossing time

Page 2, Lines 18-19: How do cameras with different viewing geometries all maintain a 275 m pixel size (I would expect nadir = 275 m, but off nadir > 275 m).

Page 2, Lines 27-28: "can be directly measured in the field by pointing a spectro-radiometer (or sun-photometer) at the ocean and dividing by the measured incident irradiance" is not correct. Deriving Rrs from above-water instrumentation also requires measuring sky radiance in the same plane as water-leaving radiance, plus making an estimate of surface reflection. The statement is true for in-water measurements that profile from depth to the surface to derive upwelling radiance.

Page 2, Lines 30-31: FWIW, the classic and most widely recognized reference for empirical ocean color algorithms is O'Reilly et al. 1998 in J. Geophys. Res. Oceans.

Page 2, Lines 31-32: FWIW, the only references in this sentence the appropriately support the statement are Maritorena 2002 and Werdell 2013 (e.g., Lee 2002 does not retrieve Chl).

Page 4, Line 24: Any sense of the sensitivity of the retrievals that results from use of a fixed surface pressure vs. a dynamic one?

Page 6, Line 11: Is there a reference for this?

Figure 4 and caption: The circles represent in situ measurements from a hand-held sun photometer, not AERONET, correct? If not, please describe how the AERONET

instrumentation moved throughout the scene.

Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2018-205, 2018.