

Authors response to anonymous referee #2

“Introducing the MISR Level 2 Near Real-Time Aerosol Product”,

by Marcin L. Witek et al., Atmos. Meas. Tech. Discuss.,

<https://doi.org/10.5194/amt-2021-71-RC2>, 2021

The Standard MISR aerosol optical depth data product is a well established data set which has been used for multiple reanalyses and investigations related to aerosol forcing of climate and air quality research. The recent availability of the NRT MISR aerosol product has opened the door for time sensitive applications such as air-quality forecasting and monitoring. Therefore, a peer reviewed publication documenting the strengths and weaknesses of the algorithm is not only welcome but necessary for proper use of the data. Therefore, I strongly support its publication.

The paper is well written and for the most part documents the shortcoming of the NRT product, primary due to the absence of upstream datasets that impact the cloud screening process. Currently, there are 3 MISR aerosol products: 1) the NRT product being documented here, 2) a FIRSTLOOK product that has similarities to the NRT product, and 3) the final, refined Standard product that is available with 3-6 months latency. While the MISR Final Product in 3) is the golden standard among all their products, it is curious that the authors chose the FIRSTLOOK product, which suffers from many of the same limitations, as a reference. I strongly encourage the team to redo the calculations using the MISR Standard product as reference.

Please see in-line comments in the attached document for additional suggestions for improving the manuscript.

Re: We'd like to thank the referee for reading our manuscript and providing very useful comments and suggestions. We followed the general remark regarding redoing our analysis using the MISR Standard Aerosol (SA) product rather than the FIRSTLOOK product. When we started working on NRT analysis and the writing of this paper, the standard aerosol (SA) product was not yet available, which motivated the use of the FIRSTLOOK product. Since the SA product has become available by now, we repeated our investigations using the SA product instead of FIRSTLOOK. All figures and analyses have been updated accordingly. Furthermore, we included both the FIRSTLOOK and SA results in Figure 3 (see below as well), which shows the overall AOD histograms for land and dark water (DW) retrievals. The histograms of FIRSTLOOK and SA AODs are almost indistinguishable from each other, which confirms strong similarity of the two products. This is expected, as the ancillary datasets underlying the two retrievals do not change considerably. Note that none of the conclusions in the original manuscript, which were based on the FIRSTLOOK product, requires to be adjusted based on the use of the final SA product.

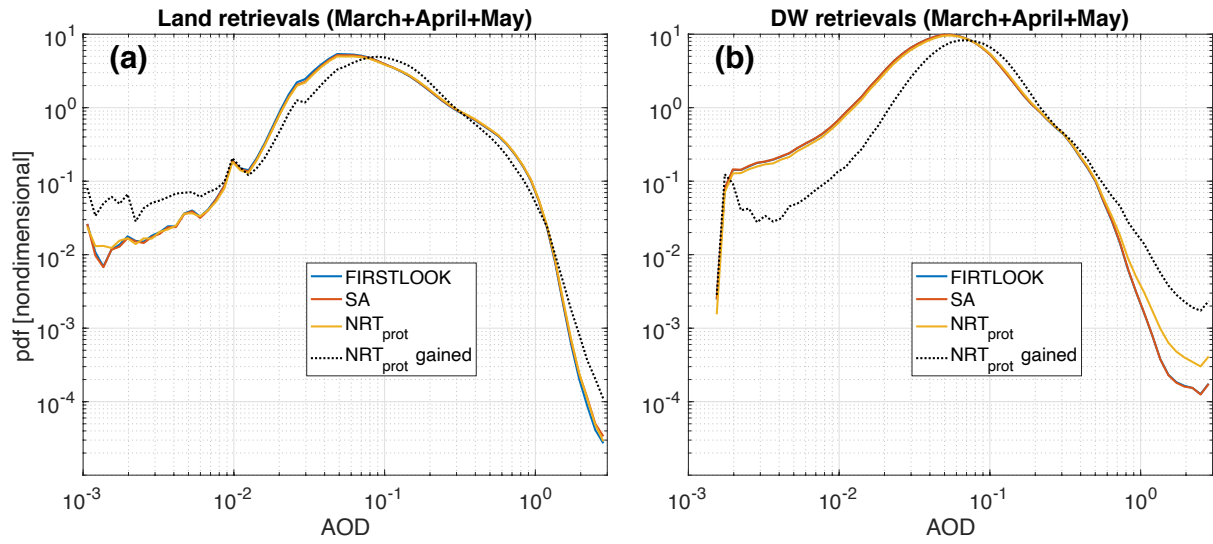


Figure 1 AOD pdfs for land (a) and DW (b) retrievals, respectively. Data statistics are provided in Table 1.