Atmos. Chem. Phys. Discuss.,
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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Above Cloud Aerosol Optical Depth from airborne observations in the South-East Atlantic" *by* Samuel E. LeBlanc et al.

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This AMTD article highlights data collected during ORACLES 2016 using primarily the 4STAR instrument. The big takeaway I got from this was how much lower the ACAOD from 4STAR was compared to MODIS-based products, along with a general understanding of how ACAOD varies in the SE Atlantic using additional instrumentation. I will certainly be interested in learning more about why this is. The figures are beautiful, and the text is logically ordered and easy to follow. I have a few general questions and comments about the text that are hopefully easy to address & answer.

Page 6, Line 28: You should specify exactly what "high relative humidity" is here. Was it above 80%? 90%? It's certainly possible to have clouds in sub-saturated conditions,

and hence it would be useful to know the threshold you used in this backup in/out-of-cloud screening method.

Page 8, Line 28: I'm not entirely clear in understanding why the standard deviation of ACAOD is so large at longer wavelengths. Is it possible that there were fewer available quality measurements at those wavelengths? Also, why would signal-to-noise be lower?

Page 16, Line 5: Do you mean to say "the largest gap extents are observed near 7 degrees W"? I'm confused by what "the largest gap extents are observed not as expected but offshore" means. Perhaps it may be worth mentioning here where the largest gap extents are observed in the MOD06ACAOD vs. your measurements, to make this more clear in this section.

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