

Interactive comment on “Development of a new data-processing method for SKYNET sky radiometer observations” by M. Hashimoto et al.

Anonymous Referee #3

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This paper discusses changes in data processing that improve the retrieval of the single scattering albedo of aerosols measured remotely with the SKYNET sky radiometer. Improvements are compared to AERONET retrievals as a standard because AERONET uses "rigorous calibration routines". The authors demonstrate that the unknown surface albedo, incorrect field of view assignment, and cirrus cloud contamination could explain some of the bias. This led to improved quality control methods that minimize these error sources. They demonstrate that the steps taken to eliminate cirrus contamination may affect retrievals of coarse particles such as dust and steps need to be taken to recognize this situation a priori.

I find the paper acceptable with some corrections outlined below. I do think that an-

other retrieval technique should not be the standard of comparison for single scattering albedo and that comparisons to in situ methods of measuring SSA under low ambient humidity conditions may be preferable if it can be arranged.

P. 4364, line 22 radiations → irradiances

Figure 1: Compare simultaneous data on a scatterplot of say SKYNET vs AERONET; this plot does not convey clear information for either AOD or SSA.

By the way, AOT refers to (AOD X airmass) and I suspect you are talking about AOD referred to unit airmass. This is defined by the WMO.

Also, some aerosols have very little absorption at these wavelengths and SSA could be close to 1 so I do not think that you should exclude SSA's near 1 unless you have some a priori information about the aerosols

P. 4377, lines 19-19 Could you elaborate on the statement that a lack of large particles causes 'overestimation' of radiance values at all observation angles. I believe that large particles increase the forward scattering lobe so radiances near the sun would have lower values if you eliminate the large aerosols, correct? Did you mean 'underestimation'?

Interactive comment on Atmos. Meas. Tech. Discuss., 5, 4361, 2012.

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