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Atmospheric Measurement Techniques Discussions

Interactive comment on "Comparison of AERONET and SKYRAD4.2 inversion products retrieved from a Cimel CE318 sunphotometer" *by* V. Estellés et al.

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The paper amt-2011-150, "Comparison of AERONET and SKYRAD4.2 inversion products retrieved from a Rimel CE318 sunphotomer" by Estellés et al., is an interesting work related to comparison the results of the two inversion codes: the code used by AERONET and the SKYRAD used by SKYNET network. Actually, the AERONET code is used only by the AERONET network, and the inversion algorithm is not publicly available and, in this sense, the independent sunphotometer users cannot use this code and it's necessary other public algorithms. Thus, this type of works will be interesting for

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publication in AMT.

On the other hand, the paper needs corrections/comments, particularly respect to:

1.) In Section 3.1.1 and 3.1.2, and other sections, the authors should include the dependence on wavelength for all parameters affected in equations and symbols, as example, as subscript.

2.) In Section 3.1.3 the authors should include information about the sensitivity of the refractive index and the asymmetry parameter, or % of errors. Sensitivity information similar to lines 342-357 (AERONET algorithm) for the Skyrad.pack algorithm is interesting to interpret the results.

3.) As the authors stated in Section 3.2, the errors of the AERONET inversion algorithm "were mainly dependent of the aerosol optical depth and the scattering angle available range, being largers for the low aerosol burden conditions", and lines 350-357; but the authors use the inversion results for all the analyzed period, including AOD values <0.2. In AERONET 2.0 level data the inversion parameters (single scattering albedo, refraction index,...) for low AOD values are cleaned. It makes sense to compare in paper the results for these AOD values?

4.) In lines 520-523 the authors stated "To our knowledge, no previous comparisons of this parameter (g) has been published". Olmo et al. (2006) shows comparisons of the asymmetry parameter and other optical and microphysical parameters using the AERONET and Skyrad.pack for different atmospheric events at Granada (non-spherical approximation).

5.) Lines 624-634. Olmo et al. (2006) also show trimodal size distributions using the non-sphericity effects. Probably, these differences in codes are due to the different approximations used in the size distribution shapes. The size distribution tails in AERONET code tend to 0 each time close to 10-20 microms interval, but Molero et al. (2005, Proc of SPIE Vol. 5979 59790O-1), comparing with size distributions measured

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at ground level (well-mixed boundary layer), show distributions tails open close to 10 microms.

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