

Interactive
Comment

Interactive comment on “Microphysical particle properties derived from inversion algorithms developed in the framework of EARLINET” by D. Müller et al.

Anonymous Referee #2

Received and published: 8 February 2016

Page 12825, line 8: “comparably high quality” Provide numbers in the abstract (the same for real and imaginary parts at line 10)

Page 12826, lines 20-21: “Both methods... algorithms” What is a “non-true” inversion algorithm? Rephrase, or omit this phrase.

Page 12826, lines 24-25: “That means... computations” I think you mean “That means that we carry out forward computations”?

Page 12827, lines 5-8: “The disadvantage is... results” Is this because you do not use other constrains too (not only the shape of the size distribution constrain)? Please clarify.

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Page 12828, lines 12-24: “The retrieved. . . SSA” What are the accuracy requirements for the imaginary part of the RI and the SSA for climate change studies? See for example Mishchenko et al. (2004) and provide the numbers here, so your retrieval accuracy is put into context:

Mishchenko, M.I., B. Cairns, J.E. Hansen, L.D. Travis, R. Burg, Y.J. Kaufman, J.V. Martins and E.P. Shettle (2004), Monitoring of aerosol forcing of climate from space: Analysis of measurement requirements, *J. Quant. Spectrosc. Radiat. Transfer*, 88, 149-161.

Page 12829, lines 6-7: “We carried out. . . mode” The light scattering mode used in the AERONET inversion algorithm is not “the AERONET scattering model”, it is the T-matrix code for the non-spherical (spheroid) particles and the Mie code for the spherical particles. Please rephrase.

Page 12829, lines 21-25: “The inversion. . . parameters” Provide relevant references

Page 12831, lines 8-11: “Moreover... (Bockman et al., 2012)” Provide more info about the performance accuracy, especially for the coarse mode of the dust particles.

Page 12842, lines 26-28: “Those. . . Samaras et al. (2015)” Include this in the abstract.

Page 12849, lines 7-9: “In this study. . . refractive index.” Include this in the abstract.

Interactive comment on *Atmos. Meas. Tech. Discuss.*, 8, 12823, 2015.

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