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Atmospheric Measurement Techniques Discussions

Interactive comment on "Advanced characterization of aerosol properties from measurements of spectral optical depth using the GRASP algorithm" *by* B. Torres et al.

B. Torres et al.

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Just to be above board, this is Norm O'Neill. You should consider the elaborations / corrections that I have made below to the paragraph where the SDA is described in your text (I had tracking on in Word).

O'Neill et al. (2003) developed the Spectral Deconvolution Algorithm (SDA) to discriminate fine and coarse mode extinction at a reference wavelength. That study employed the 0th, 1st and 2nd order mathematical (differential) equations describing a bi-modal, particle size distribution (O'Neill et al., 2001b) to arrive at an expression for the fine Angstrom exponent (a pure spectral derivative) and, in turn, the fine AOD (from

the 1st order Angstrom type equation) and the coarse AOD (from the 0th order AOD equation). The set of 3 equations were then solved for fine and coarse parameters given the total AOD along with its 1st and 2nd order spectral derivatives as input. This solution involved two 2nd order approximations: prescribing low fixed values for the coarse Ångström exponent and its derivative and the use of an empirical relation (between the fine Ångström exponent and its derivative). The algorithm is part of the AERONET processing chain : the value of the fine and coarse AOD at 500 nm is retrieved from every measured AOD spectrum and provided as a standard product of the network (full description in http://aeronet.gsfc.nasa.gov/new_web/PDF/tauf_tauc_technical_memo1.pdf).

Thank you very much for your corrections. We have added the text exactly as you have suggested. We have acknowledged your collaboration at the end of the manuscript.

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