

Interactive comment on “Validation of UV-visible aerosol optical thickness retrieved from spectroradiometer measurements” by C. Brogniez et al.

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Regarding the paper: Validation of UV-visible aerosol optical thickness retrieved from spectroradiometer measurements by C. Brogniez, V. Buchard, and F. Auriol.

I found this work very interesting and clear concerning aerosol optical thickness (AOT) spectroradiometer issues. I would like to contribute to this work by the following comments:

a. A major issue for ground based AOT monitoring instruments is the cloud detection. Since the measurement of AOT with this (shadowband technique) instrument requires at least half an hour (for two diffuse and one global measurement), what is

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your methodology of detecting cloud effects during this period ?

b. Fraunhofer lines seen in figure 2 can be an effect of the wavelength dependent slit function (in combination with the wavelength shift correction).

c. In the uncertainty analysis you are referring to a relative uncertainty for the E(dir) (1.5%) (formula 4). The instrument calibration is based on lamp measurements and you are using an ET spectrum for the AOT retrieval. Both global and diffuse measurements (and their subtraction) are affected from measurement, calibration etc uncertainties. In addition to those introduced by the direct changing "field of view" (wavelength, solar zenith angle and aerosol dependent), the assumption of aerosol stability and cloud absence during the half hour period and synchronization with the CIMEL.

d. Qasume results have been published by Groebner et al., 2006- metrologia 43, 866-871.

Again, i think that this is an interesting paper. This in depth analysis is required when aiming to use the AOT retrievals for future climatology or satellite validation studies. I hope that the authors find some of the above comments valuable.

Interactive comment on Atmos. Chem. Phys. Discuss., 8, 3895, 2008.

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