

Interactive comment on “On the interpretation of the loading correction of the aethalometer” by A. Virkkula et al.

Anonymous Referee #1

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The loading effect present in filter photometers has been studied quite deeply in the past two decades. Lately, there have been interesting developments in the data post-processing, on-line determination of the loading effect parameters, and, finally, to causative effects. The influence of the backscattering fraction on the parameter k and the different variation of the parameter k with wavelength for different backscatter fractions are the first quantitative pointers to the phenomenology of the loading effect. The influence of SSA is very nicely illustrated, as well as its weaker influence on the parameter k . This paper is an important contribution to the topic of the loading effect.

Detailed comments

Page 7380, line 14: the instrument contains “mass attenuation coefficients”, which is

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consistent with the notation of Eq. 3. The “uncorrected absorption coefficient” σ_0 is usually denoted as the “attenuation coefficient”. Using this notation might avoid unnecessary confusion on the part of the readers.

Figure 8: the discussion of this figure in section 3.4 is very interesting. The figure needs a legend with labels for Collaud Coen et al. (2010) and Arnott et al. (2005) algorithms.

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