Atmos. Meas. Tech. Discuss., 2, C856–C857, 2009
www.atmos-meas-tech-discuss.net/2/C856/2009/

Atmospheric Measurement Techniques Discussions

Interactive comment on "Minimizing light absorption measurement artifacts of the Aethalometer: evaluation of five correction algorithms" *by* M. Collaud Coen et al.

Anonymous Referee #1

Received and published: 3 December 2009

The manuscript "Minimizing light absorption .." by Coen et al., is a significant contribution towards the development of an improved correction scheme for light absorption coefficient (sigma) measurements by means of aethalometers. Some general comments are listed below for a revised manuscript.

The correction algorithms evaluated here are 4 existing algorithms, while 2 of those have their critical parameters modified and are introduced as new methods.

2. Since no reference method exists for a control measurement of sigma, the performance evaluation of the correction schemes, presented here, is either relative to each other or based on concurrent measurements of sigma by the MAAP. Although the

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MAAP has been found to provide an improved measurement of sigma, it has not been established as a universal measurement method for absorption. It is suggested that this is made clear in the manuscript.

3. Table 1 lists the instrumentation used for obtaining the datasets under examination. It includes sampling of different size fractions under different conditions (dry-ambient) and on different filter tapes. Some indication of the uncertainty introduced in the evaluation form these factors is necessary.

4. According to table 1, a PAS was available as a reference instrument for sigma in one of the campaigns (AMA). Despite the short measurement period it would be advantageous for the manuscript to present the comparison between the PAS values and the corrected sigma obtained by the old and new algorithms.

Interactive comment on Atmos. Meas. Tech. Discuss., 2, 1725, 2009.