

Interactive
Comment

Interactive comment on “Spectral optical properties of long-range transport Asian dust and pollution aerosols over Northeast Asia in 2007 and 2008” by J. Jung et al.

Anonymous Referee #2

Received and published: 7 April 2010

General Comments:

This paper is well constructed and is a significant contribution to an important field of study: climate forcing by ambient aerosols. The authors combine multiple techniques to develop a spectral signature of Asian dust and pollution aerosols that may be helpful in reducing the uncertainties associated with direct climate forcing by ambient aerosols. The authors makes careful use of the data and the use of the associated correction factors for aerosol absorption and scattering data is transparent and thoughtful. Overall, this is an excellent paper, and I fully support its publication in ACP with only a few minor revisions.

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Specific Comments:

Section 2.1, Lines 5-10:

1.) Was the analyzer calibrated using an external calibration standard (i.e., sucrose spikes or methane injection), or did you assume that the manufacturer's internal standard calibration coefficient was correct?

2.) Typically, for the purposes of QA/QC, some type of data comparison should be performed in order to validate the concentrations reported by the Sunset lab instruments; this often includes analysis of co-located filter samples. Is there any co-located data that can be used?

Section 2.2, Lines 3-5:

1.) Although there is evidence to support that humidity does not affect Aethalometer BC measurements, the authors should comment on whether drying the aerosol might change its ambient optical properties; i.e., they should make clear whether there is evidence that water can/cannot enhance light absorption in internally mixed BC particles by optical focusing.

Figure 2:

1.) The authors should indicate in the caption what the error bars represent in order for readers to assess whether there are statistically significant differences between the BC/EC ratios

Interactive comment on Atmos. Chem. Phys. Discuss., 10, 2397, 2010.

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