

Interactive comment on “Aerosol spectral absorption in the Mexico City area: results from airborne measurements during MILAGRO/INTEX B” by R. W. Bergstrom et al.

Anonymous Referee #1

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General comments:

The title of this paper is an excellent description of its contents: Aerosol absorption in the Mexico City area using data from MILAGRO/INTEX B. The paper looks specifically at single scattering albedo (SSA) and aerosol absorption optical depth (AAOD) inferred from aircraft data. The results are discussed by themselves and also compared with the results of others. The paper is well-focused and important, and merits publication in ACP, subject to the items discussed below. These items are suggestions to improve the paper's exposition; I found no scientific flaws to address.

Specific comments:

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(1)Section 3.2: The flux divergence technique requires the measurement of net fluxes at two different levels at the top and bottom of an aerosol layer. I think it would be a good idea to spell out the altitude of the top layer, so the reader has some idea of the thickness of the layer over which flux divergence is calculated. I think this request is particularly applicable to section 5.2, where the altitudes of the bottom levels of the flights are provided, but not the top level. It would be good, also, to provide the layer thicknesses in the legend of Figure 5.

(2)Section 4.0.2: Is the value for the asymmetry parameter assumed? If so, what might be a typical value at, say, 500 nm?

(3)Section 4.0.2: End of third paragraph. What does “scaled the total column amount in the same ratio as the aerosol optical depth . . .” mean?

(4)Section 5.1: Fifth and sixth paragraphs. Some of the AAE values given in the text don't jive with the corresponding values in Table 1. For example, the text state that “the extinction Angstrom exponents for this day were 1.0 and 0.8 west and east”, but the table list different values for the extinction Angstrom exponents (EAE). Need to check the text and table carefully.

Technical comments:

(1)First sentence under “5 Results”. Need a space between “13 March” and “and”.\

(2)Table 1. Need “***” in front of second footnote.

Interactive comment on Atmos. Chem. Phys. Discuss., 9, 27543, 2009.

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