Atmos. Chem. Phys. Discuss., 9, S745–S746, 2009
www.atmos-chem-phys-discuss.net/9/S745/2009/

Atmospheric Chemistry and Physics Discussions

Interactive comment on "Biomass burning and urban air pollution over the Central Mexican Plateau" *by* J. D. Crounse et al.

Anonymous Referee #2

Received and published: 11 March 2009

Biomass burning and urban air pollution over the Central Mexican Plateau

General comments:

I find this article suitable for publication since it convincingly obtains and estimate of the importance of fire emissions on air quality in the central region of Mexico.

The main methodological tool was the two end member model discussed in the paper. From the results provided by the authors it was well implemented and comparisons with measured data during the Milagro campaign were successful. The information provided by this paper is useful and an important result of the Milagro campaign.

Specific comments:

1).- In section 4: Implications for air quality improvement discussion. I suggest clearly separating the discussion in two parts: One on implications at regional level, and one on urban level. The urban level implication should introduce possible interaction with urban heat island and related urban canopy (see for example p. 342 Arya, Micrometeorlogy, 2nd Edition) that may help explain why some aerosols concentrations were high aloft and not so on the surface in Mexico City.

2).- In paragraph 25 p. 2711: For health purposes yearly averages are as important as hourly or daily concentrations i.e. extreme pollution events. Discuss if fires may impact these concentrations.

Another suggestion is to include a comment and reference to the paper also of the Milagro campaign in the same ACPD issue: Evaluating simulated primary anthropogenic and biomass burning organic aerosols during MILAGRO: implications for assessing treatments of secondary organic aerosols.

Technical corrections:

In paragraph 5 p. 2704: Fig. 2c is referred but not included

In paragraph 25 p. 2709: Put reference from which automobile primary organic aerosols emissions data were obtained.

Table 1: Should have a more informative heading on how to read the table, or put this information in the text.

Interactive comment on Atmos. Chem. Phys. Discuss., 9, 2699, 2009.

ACPD

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