Atmos. Chem. Phys. Discuss., 7, S4236–S4238, 2007
www.atmos-chem-phys-discuss.net/7/S4236/2007/

Atmospheric Chemistry and Physics Discussions

Interactive comment on "Source apportionment of fine organic aerosol in Mexico City during the MILAGRO Experiment 2006" *by* E. A. Stone et al.

V. Mugica (Referee)

vma@correo.azc.uam.mx

Received and published: 21 August 2007

This paper describes the characterization and source reconciliation of organic compounds content in fine particulate matter in Mexico City. This kind of studies are very scarce in Mexico and the characterization of organic compounds in this research is indeed the most detailed carried out until today. The discussion about the source apportionment is very interesting and the results presented in this paper will contribute to the understanding of the polluting aerosols in the atmosphere of Mexico City.

Generally speaking, the paper is very good, but it sometimes is very brief thus giving rise to doubts which tend to remain. I would like to offer the following comments:

Page 9640, 2.2 Chemical analysis. 1. It is not very clear how the extract from soxhlet

was divided, how many derivatizations, only two? which was used for PAH analyses? 2. How many and which internal standards were used? 3. I understood that n-alkanes were measured, how many and which ones? because table 1 doesn't report any.

Page 9640, 2.3 Source apportionment.

1. Although it was explained that profiles were taken from the literature, it is not clear how many profiles were used and which ones, there is very little detail provided. I assume the authors applied at least 5 profiles: woodsmoke, vehicles, gasoline vehicles, smoke vehicles (that is, by the way, a new concept in source apportionment), diesel engines and vegetative detritus, but it is not clear if there were several profiles for each source. For example Fine et al. (2004) have many profiles for woodsmoke. Did the authors apply one or several in each reconciliation or develop one as an average? The same situation occurs with the other sources; each mentioned in the paper has several profiles. A more detailed description about the profiles applied would be necessary for future studies and comparisons. 2. How many fitting species were used in the CMB model? Page 9641, first paragraph talks about the chemical species: 3 hopanes, 5 PAH, EC, levoglucosan and C28-C34 alkanes. (Which alkanes and how many?). Which were the criteria for the selection of PAH and alkanes?

Page 9643. Results Line 21 Regarding figure 3, it doesn't seem that on weekend, hopanes concentrations were lower with the exception of day 19. On the other hand, March 21 should be included in this category because it was a holiday that allowed the circulation of all vehicles.

Page 9646. Results

Line 12 The suggestion could be ventured that urban woodsmoke events that affect urban atmosphere do not affect the periphery. Most of the days the winds did not blow to the north (peripheral site), so that could be the reason of the apparent lack of influence. Although the discussion could be true, it will be better supported with the analyses of direction and speed of the wind. This is one of the advantages of the MILAGRO study

ACPD

7, S4236–S4238, 2007

because there are meteorological data available from other researchers.

Interactive comment on Atmos. Chem. Phys. Discuss., 7, 9635, 2007.

ACPD

7, S4236–S4238, 2007