

Interactive comment on “Measurement of ambient aerosols in northern Mexico City by single particle mass spectrometry” by R. C. Moffet et al.

Anonymous Referee #2

Received and published: 20 June 2007

The paper deals with one aspect of a widely studied problem, namely, air pollution in the Mexico City Metropolitan Area, completely within the scope of this journal. The use of single particle mass spectrometry represents a new (very powerful) tool to understand the origin of particulate matter in the MCMA, providing novel information. Therefore, it is possible for the authors to present important conclusions on this issue, with clearly established methods. However, the results contain such an amount of information, due to the characteristics of the measuring device, that sometimes it seems difficult to comprehend it as a whole. Certainly, the experimental method is unique (and so is the data analysis), so that it will be very difficult to prove the reproducibility of the results by other group. Nevertheless, the outcome of the work seems to be very reasonable. Also, there is a clear indication of the original contribution of this work. The structure

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper

Interactive
Comment

of the paper, the references, the language, as well as the number of references and figures, are adequate. My impression is that this paper should be accepted with minor corrections, explained below: 1. I would suggest a modification in the title of the paper, changing the word “Measurement” by “Characterization.” 2. Some of the results, like the discussion on the composition of PbZn and related particles, indicate there is still a need for other complementary techniques that would help to answer some of the questions still left open in this work. This is especially true when there are interferences among several chemical species with the same mass. Possible complementary techniques might be Electron Probe Microanalysis (EPMA), microXRF or microPIXE, offering results on single particle analysis. It may be useful to add a comment on this. 3. The authors pay special attention to element vanadium. In this regard, Fig. 10 shows a strong source of this element in the Southeast area. The authors do not mention this fact nor give any explanation to a possible source there. 4. Iron is an element found in high concentrations in all the works published earlier about elemental contents in the MCMA aerosols. The authors, however, only mention that there may be an interference with other compounds with the same mass and a brief comment on Fe-soil particles. I believe there should be a deeper discussion about this element, as there may be other sources in addition to soil. 5. Other minor points are the following: a. Page 6416, line 15: Johnson et al. (2006) actually used Positive Matrix Factorization, not exactly Factor Analysis; also, the citation “Johnston” should read “Johnson.” b. Page 6418, line 16: Write the correct date. c. Page 6421, line 2: For the sake of clarity for non-expert readers, it may be convenient to explain what the units “m/z” mean. Also, a space is missing in “units in.” d. Page 6430, line 19: a space is missing in “=0.38 μm ”. e. Page 6431, line 14: “Figs. 8-10” should change to “Figs. 9-11.”

Interactive comment on Atmos. Chem. Phys. Discuss., 7, 6413, 2007.

[Full Screen / Esc](#)[Printer-friendly Version](#)[Interactive Discussion](#)[Discussion Paper](#)