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Interactive comment on "Characterization of ambient aerosols in Mexico City during the MCMA-2003 campaign with Aerosol Mass Spectrometry – Part I: quantification, shape-related collection efficiency, and comparison with collocated instruments" *by* D. Salcedo et al.

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This comment from the authors regards part I and part II of "Characterization of ambient aerosols in Mexico City during the MCMA-2003 campaign with Aerosol Mass Spectrometry". Both manuscripts are very related and were published in ACPD simultaneously. Some of the referees' comments that have been published discuss the

structure of these and other upcoming manuscripts, and the organization of the information in both manuscripts. This general response addresses the issues of structure for both manuscripts. In separate responses, we will answer specific comments from each referee.

The main comments (echoed by more than one referee) that have to do with the structure of the manuscripts are:

1) There is no justification for breaking the information presented into several publications 2) The discussion of particle processes in part II should be expanded

Regarding the distribution of the material from the AMS measurements during MCMA-2003 into papers, we think that it is neither possible nor convenient to publish all the results of this study of the particle processes occurring in Mexico City's atmosphere in only one publication because of the following reasons:

1. The volume of material to present is much larger than would fit in one paper. As has been mentioned in this discussion, some referees prefer large and comprehensive papers, while others prefer short and focused ones. The main authors of this paper tend to prefer the former. However in other recent reviews of our papers, we received many comments such as (copied word by word from the review): "This paper is very interesting and has a lot to communicate but it is a very long paper, one which could, and perhaps should, be broken into two papers [..]. Alternatively, by adding some additional information, this could be reconfigured into a book!!" Or from the review of another recent paper: "This paper is extremely long. Most people consider a paper half its length to be a long paper. I was not able to read it in one sitting. [..] I won't insist on breaking up the paper, but I think it should be given serious consideration." We had such reviews in mind, rather than a desire to publish a larger number of papers, when we decided to break up the material into several papers.

2. By publishing part I and II separately, we intended to separate instrument characterization and quantification issues from a description of particle properties and trends.

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We tied these two papers together as part I and II (rather than stand alone papers), due to their common subject of aerosol measurements (quality and observations) in MCMA 2003, and published them in the relevant MCMA2003 special issue of ACPD.

3. Some of the results will take significantly longer to be ready for submission, and by publishing part of the results early we meant to make clear that the data were of high quality and quantitative, and to provide a timely overview of the observed time trends of concentrations and size distributions for other analysis that are being conducted in parallel, and for the preparation of the MILAGRO (MIRAGE / MAX-Mex / MCMA) international field experiment (Feb 2006).

4. Finally, another reason to split the papers was to reduce extra page charges. Some journals have charged us more than a thousand dollars for extra pages in a single paper, and when the decision to split was made, a decision of the journal chosen for the special issue had not been finalized.

In response to the referee's and editor's comments, we will make the following major changes to the structure of the manuscripts:

1) Based on comments from referees and the editor in the interactive discussion of Part I, we will transform Part I into a technical note. Among the issues discussed in this manuscript, the use of a beam width probe (BWP), to study the shape and mixing state of the particles and to quantify potential losses of irregular particles due to beam broadening inside the AMS) has not been reported before for ambient data. The technical note will be focused on the BWP results. The title will be changed accordingly and the manuscript will be reduced significantly, in order to comply with the requirements of a technical note. The comparison between the two AMSs will be removed and the comparison between AMS+BC+soil vs PM2.5 measurements will be moved to the second manuscript.

2) Part II will be expanded into a more comprehensive manuscript, which discusses in detail some of the particle processes that occur in the Mexico City atmosphere. We

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will include the comparison between AMS+BC+soil and PM2.5, previously in part I, which justifies the speciation of PM2.5 that we present. In addition, the description of concentrations and size distributions of the aerosol in MC, we will include analysis on particle ion balance, nitrate and sulfate production, and chloride plumes (all these analyses were originally planned for a separate paper).

The analysis of the organic aerosol component will be described in a separate publication submitted by a different (first) author. The main reason is that the techniques for the analysis of organic aerosol data from the AMS are evolving rapidly, and as a consequence the relevant analysis for MCMA-2003 may not be completed for at least six months to a year longer.

Interactive comment on Atmos. Chem. Phys. Discuss., 5, 4143, 2005.