

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

**R. C. Moffet et al.**

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We thank Jimenez and DeCarlo for their comment. We have made a number of changes to the manuscript to address many of their comments. For full details and a more complete response, see the Short Comment by Prather and Moffet. Many points made by Jimenez and DeCarlo are based on the presumption that the ATOFMS data over-estimate the amount of biomass compared to their own group’s AMS data. In fact, the ATOFMS data presented in our paper are quite consistent with two other papers in this special issue of ACP (Stone et al., 2007, Yokelson et al., 2008), showing biomass/biofuel burning particles do indeed represent a significant fraction of the ambient Mexico City aerosol during MILAGRO. Fundamentally, the AMS and ATOFMS measure different components of the aerosol using different metrics. AMS is a time-resolved mass measurement of the non-refractory components in PM<sub>1</sub>, whereas the

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ATOFMS is a time-resolved number-based measurement of PM<sub>2.5</sub> that partitions different particle types/sources into size-resolved number fractions of the sub- and supermicron aerosol. The data can be put on similar bases (either converting both to number concentrations or mass concentrations), but several assumptions are needed to do so, unavoidably introducing uncertainty in the results from both methods. It often takes comparisons between multiple instruments in a major field campaign such as MILAGRO to fully understand the atmospheric aerosol.

In future comparisons of the ATOFMS and AMS datasets, along with data from other measurements made during MILAGRO (i.e. isotopes, filter data), we will be able to learn more and possibly arrive at a consensus conclusion as to the total fractions of the mass and/or number concentrations of the Mexico City aerosol attributable to several forms of biomass/biofuel burning during MILAGRO. Such a combined effort will increase our overall understanding of the major sources and processing contributing to the Mexico City aerosol.

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