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Atmospheric Chemistry and Physics Discussions

Interactive comment on "The time evolution of aerosol composition over the Mexico City plateau" *by* L. I. Kleinman et al.

Anonymous Referee #3

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This manuscript describes the results of airborne measurements of aerosol composition downwind from the Mexico City metropolitan area. The study looks at the aerosol composition as a function of photochemical processing, characterized by NOx/NOy ratios. This is really an excellent paper. The DOE G-1 data set from Milagro is eminently suited for an analysis of this kind. In addition, the authors do a commendable job of describing the treatment of the data in detail and placing the observations in the proper perspective provided by the recent literature. The main conclusions are that the growth of organic aerosol in the urban plume is rapid and cannot be accounted for by the removal of aromatic precursors These conclusions agree with those from multiple other studies -all are properly referenced- and as a result this work places all of these findings on an even firmer basis. The authors end by noting that OA/CO ratios after 1

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day of processing are similar between Mexico City and the northeastern U.S. This is a very interesting finding that was maybe not entirely expected. Future research should be aimed at explaining these similarities, and may give further insights into the precursors and mechanisms that are responsible for SOA formation in urban plumes. The manuscript can be published as is. The authors clearly did a very careful job describing these results and there is no need to burden them with more work in order to get this study accepted to ACP.

Interactive comment on Atmos. Chem. Phys. Discuss., 7, 14461, 2007.