

***Interactive comment on “Distribution, magnitudes, reactivities, ratios and diurnal patterns of volatile organic compounds in the Valley of Mexico during the MCMA 2002 and 2003 field campaigns” by E. Velasco et al.***

**Anonymous Referee #2**

Received and published: 15 September 2006

This paper reports measurements of volatile organic compounds (VOCs) conducted during the MCMA 2002 & 2003 field campaign in the Valley of Mexico. Four independent VOC measurement techniques were deployed at eight different field sites representing urban, rural, and industry plume signatures. The aerodyne mobile laboratory provided the platform to monitor the fresh on-road emissions. The distribution, magnitudes, reactivities, ratios, and diurnal patterns of VOCs measured during the field campaign were presented. The findings are important to evaluate existing emission inventories and to investigate the local photochemical processes leading to ozone, and

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper

secondary organic aerosol formations. The paper is well written and should be publishable after addressing several minor issues.

Because the data were collected by four types of instruments with different sensitivity, temporal and spacial resolutions, the validation of each technique was crucial for drawing the final conclusions. As the authors pointed out that the FOS responded to several olefin species with different sensitivity, but it could not specify the olefin species. If the FOS signal was treated as the response from propylene, how would this affect the estimation of the olefin budget? Was it possible to use the canister data to identify the olefin peaks?

The PTR-MS was proven to be a fast-responding and sensitive VOC measurement technique and the species reported in the paper were validated by other laboratory and field studies. The background check and calibration procedures were valid.

The DOAS was able to identify compounds by its signature absorption spectrum. The long path could improve instrumental sensitivity, but it also made the inter-comparison with other point measurement techniques difficult. This issues should be discussed.

On page 16, line 21, the author claimed that the isoprene more likely had an origin from vehicle exhaust. Can the author provide some reference of the chemistry to support this statement?

Overall, this study will improve our understanding of the air pollution pattern in the Mexico City area. The findings will help to update the emission inventory and serve as the basis of new regulation.

---

Interactive comment on Atmos. Chem. Phys. Discuss., 6, 7563, 2006.

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