Atmos. Chem. Phys. Discuss., 6, S3065–S3067, 2006
www.atmos-chem-phys-discuss.net/6/S3065/2006/

Atmospheric Chemistry and Physics Discussions

Interactive comment on "Characterization of on-road vehicle emissions in the Mexico City Metropolitan Area using a mobile laboratory in chase and fleet average measurement modes during the MCMA-2003 field campaign" *by* M. Zavala et al.

M. Zavala et al.

Received and published: 12 September 2006

The authors would like to thank the referee for his/her suggestions regarding the analysis of the data presented in the manuscript. We have made some changes in the manuscript according to those suggestions and they are described in the following points.

1) & 2) We have modified the Abstract to include some hard facts from results in the paper and changed the sentence on the conclusions for the CNG-powered colectivos.

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3) With this sentence we want to emphasize that the equal dilution assumption may not hold for larger particles due to their greater susceptibility for gravitational deposition. We agree, however, that this is not the scope of this paper and we have edited the sentence accordingly.

4) The referee is right in pointing the interpretation of the probable contribution of the CNG powered colectivos to the overall NOx and aldehyde emissions. We have edited this part in the manuscript by referring to the higher measured NOx and aldehyde emission ratios from CNG powered colectivos in comparison with other sampled vehicles in our experiment and other studies, rather to the overall NOx and aldehyde emissions in the MCMA.

5) We have edited the sentence to indicate clearly that are emission ratios and, when needed, we specify that the comparison is in a mole by mole basis.

6) Discussions on page 4706 regarding the comparisons of our measurements are certainly based on the transformation of emission factors to emission ratios. This is described in lines 6 to 10 in the same page. We believe it is important to present our results in this fashion as to emphasize their nature as measurements, rather than estimation from models, and for further comparisons with previous and future works using similar measurement techniques, if needed. Nevertheless, the conversion from one set of units to the others is readily possible with the information provided in the manuscript.

7) We have included a sentence indicating the possible effect of high altitude in the MCMA and its impact on the poorer performance of combustion engines.

8) See points 1, 2 and 4 above.

9) We have removed the sentence.

10) We decided to keep the information on the CPC (as well as for the other aerosol instruments on board the mobile lab described in Table 1) to make reference to them

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(and to the used methodology in general) in a future publication. The analysis of such data is currently ongoing and will be presented in a future publication. The limits for the CPC have been edited to be more explicit.

11) We have indicated the units, thanks for the note.

12) We have added such references and included some other corresponding to dynamometer studies.

Interactive comment on Atmos. Chem. Phys. Discuss., 6, 4689, 2006.