

Interactive comment on “An overview of the MILAGRO 2006 campaign: Mexico City emissions and their transport and transformation” by L. T. Molina et al.

Anonymous Referee #2

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The paper: ‘An overview of the MILAGRO 2006 campaign: Mexico City emissions and their transport and transformation’ by L.T. Molina, S. Madronich, J.S. Gaffney, et al.

This paper presents a very interesting overview and analysis of results of a really unique experimental study of effects of megacities on atmospheric composition on urban and regional scales. It analyses outcomes of the spring 2006 MILAGRO field campaign for the Mexico City Metropolitan Area. In this overview paper the authors give a detailed review of about 120 scientific papers describing different aspects and specific measurement studies within the MILAGRO campaign. The study aim of providing a road map for the scientific community interested in understanding the emissions

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from a megacity such as the Mexico City Metropolitan Area and their impacts on air quality and climate is well reached.

The manuscript is clearly presented and fluently written, however it is extremely long (165 pages) and gives problems for a reader to follow all the text. The context and motivation of the work are clear. The analysis of the data is comprehensive and sound, and the results are very interesting.

The manuscript should be accepted for publication in ACP.

Some specific comments:

Concerning the length of the paper: I agree that it needs to be long and it is not easy to shorten it significantly. However, several places with text overlaps could be removed, e.g. on pages 7829 and 7901.

The paper describes in details the MILAGRO measurements, Mexico City’s atmospheric emissions of gases and fine particles, sources and concentrations of volatile organic compounds, urban and regional photochemistry, ambient particulate matter, aerosol radiative properties, urban plume characterization, and health studies. However, an important problem of impact of urban features, e.g. anthropogenic heat fluxes on the megacity climate and their interaction with the atmospheric pollution and chemical composition is almost not analysed. At least on page 7823 in line 21 additionally to ‘removal processes’ it would be important to add ‘and interaction with clouds, atmospheric boundary layer, radiation, etc’.

On page 7833 after the line 6 a blank line is necessary, in other case the following text is considered as a part of 3.4 (INTEX-B).

In 3.2-3.4 it is better to give the time of the experiments (year, etc.).

Minor misspellings exist and an additional editing is recommended.