

Interactive comment on “Sources and production of organic aerosol in Mexico City: insights from the combination of a chemical transport model (PMCAMx-2008) and measurements during MILAGRO” by A. P. Tsimpidi et al.

Anonymous Referee #1

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This manuscript is a well-written, clearly structured description of the application of the PMCAMx-2008 model (which uses the well documented volatility basis set module) to the Mexico City area during the MILAGRO 2006 period. It focuses on the prediction of organic aerosol and its temporal and spatial evolution. This is a topic of much interest within the atmospheric chemistry community and therefore is well within the scope of ACP. The title and abstract are appropriate, and the citation of previous work is more than adequate.

I have no major technical criticisms of this manuscript. However, I do not believe that

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the paper presents any new techniques or ideas; it seems to be a pretty standard model application and comparison to data measured in the ambient atmosphere, with a sensitivity study. While I recognize that this is an important exercise, it is for this reason that I do not rate the paper higher than fair in the significance category, especially since the model findings support the hypotheses made by interpretation of the measurement data. That being said, the methods used are clearly outlined, as are the assumptions made. The interpretation and conclusions appear correct based on the model output data presented.

Suggested minor corrections/changes:

Page 27929, line 8, I would suggest changing “reduced” to “decreased” as reduced also has a chemical meaning.

Page 27935, line 17, T1 is “a” suburban site, not “an” suburban site

Page 27938, line 3, “tend” not “tent”

Figures 4 and 13 should be modified. First, it also would be appropriate to show some x-y plots of observations versus measured to give an overall picture of how well the model captures the temporal variability, which is difficult to determine from the time series as shown. In addition, I recognize why the authors put all three plots on the same scale on the y axis. However, doing so decreases the ability of the reader to see the true dynamics of the behavior in the T1 and T2 panels. I would suggest showing the T1 and T2 plots on a smaller scale and noting in the caption that the scales on each panel are different.

Interactive comment on Atmos. Chem. Phys. Discuss., 10, 27925, 2010.

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