

Interactive comment on “Global combustion sources of organic aerosols: Model comparison with 84 AMS factor analysis data sets” by A. P. Tsimpidi et al.

Anonymous Referee #2

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Before I complete my review, I would like the answers to the following points from the authors.

In my pre-review of this manuscript I commented that the authors had not even mentioned the model performance for any species other than OA. I cannot see that they have added anything in this respect, so my worry remains. They present no evidence to suggest that this model can reproduce e.g. sulfate, nitrate, NO₂, CO, or any other inorganic component. I consider this a major weakness of the manuscript, since one cannot draw conclusions about such a complex field as OA modeling unless one knows that the modeling system can cope with the inorganic components.

I can also note that the cited Jöckel et al. 2006 paper for ECHAM/MESSy is not in

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the reference list. That paper (I assume they mean the ACP one) gives some clues of course, but much of the evaluation presented there is not relevant to this study. For example, Jöckel did not attempt (wisely in my view) to compare with urban areas, and in any case they used lower spatial resolution (but higher vertical, with 90 layers).

How well does this model compare to inorganic components for (i) this model-setup, and against for example long-term data, and (ii) against the much more relevant AMS data in these field campaigns, and (iii) in general for urban areas since the authors choose to include that in their analysis of OA components.

Interactive comment on Atmos. Chem. Phys. Discuss., doi:10.5194/acp-2015-989, 2016.