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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Implementation of a Markov Chain Monte Carlo Method to inorganic aerosol modeling of observations from the MCMA-2003 Campaign. Part II: Model application to the CENICA, Pedregal and Santa Ana sites" *by* F. M. San Martini et al.

Anonymous Referee #2

Received and published: 6 September 2006

General comments:

First I want to apologize by the authors to send my comments delayed by a couple of days. For this reason and the fact that Olaf Hellmuth and the anonymous referee # 3 already contributed detailed statements I will not discuss the same issues as already mentioned before.

The manuscript presented reflects an interesting study of the already in part I described

Markov Chain Monte Carlo Method to predict inorganic gas concentrations and mass fraction in aerosols. Although this treatment - as mentioned by the authors in section 6 - brings up the lag of knowledge concerning the effects of organic species and their influence of the particle properties, the results are for most of the species in relative good agreement with the measurements. The manuscript, in combination with part I present a valuable contribution for the community and taking into account the comments already published by the other referees I would recommend publishing the paper in ACP.

Special comments:

I'm not sure how huge the MCMA-2003 campaign in Mexico City was and how many different parameters were measured. However, I believe for a better understanding (and if available) I would encourage the authors to include some other data which will help the reader to understand the different mechanism. Olaf Hellmuth already mentioned a synoptic characterization of all measurement periods and I would include here also particle size distributions and organic measurements. The authors discussed the contribution of organic species and if data are available for the selected period (9-11 of April) a short discussion would be more conclusive.

Figure 4-6: I had the same problem as Olaf with the size of these figures and would also encourage the authors to use the different colors not only in the different plots but also in one plot, which would make it easier to understand these figures. It would be also useful to change the systematic of the legend so that they reflect the lines in the corresponding plot.

Interactive comment on Atmos. Chem. Phys. Discuss., 6, 5999, 2006.

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