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Atmospheric Measurement Techniques Discussions

Interactive comment on "A modeling approach to evaluate the uncertainty in estimating the evaporation behaviour and volatility of organic aerosols" *by* E. Fuentes and G. McFiggans

Anonymous Referee #2

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This manuscript describes the development and application of a kinetic evaporation model for the interpretation of thermodenuder data. Although similar models have been used previously in the literature, I find that this manuscript provides some useful insights to the topic of interpretation of thermodenuder data and can therefore be considered for publication in AMT after the issues (and the issues raised by the other reviewers) have been addressed.

General comments:

1. I second the opinion of referee #1 on focusing the article more on the interpretation

of the Faulhaber et al. results, as these are among the most important unique results presented in the paper.

2. In relation to the previous point: I also think that since many of the main conclusions (e.g. the importance of the accommodation coefficient, denuder section etc.) have already been discussed in previous work on the topic, the manuscript could be tighthened, to highlight the most important new insights.

3. While I think that many of the issues raised by Dr. Khlystov in the comment for this paper are relevant and should be addressed, I also feel that one of the strengths of this manuscript is the use of the modeling results in tight connection of experimental variables and thus the interpretation of experimental data (and direct measurables) - such as the interpretation of the Faulhaber et al. data. I therefore feel that a more detailed theoretical work would not improve this manuscript but rather the authors should concentrate on the implications of the kinetic evaporation for interpretation of measurement data.

4. In the results presented in Figs. 14-16 the authors present fits of > 7 volatility bins. It is important for the authors to clearly indicate how it was possible to constrain such a large number of bins from the data they were using. This is explained in Cappa and Jimenez (2010) but I think it should be summarised here as well.

Interactive comment on Atmos. Meas. Tech. Discuss., 4, 6723, 2011.