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Interactive Comment

Interactive comment on "A curved multi-component aerosol hygroscopicity model framework: 2 – Including organics" by D. O. Topping et al.

Anonymous Referee #2

Received and published: 4 February 2005

This paper presents a size-dependent thermodynamic aerosol modeling framework applied to organics. Paper gives a good overview of the physico-chemical complexities present in organic and mixed organic/inorganic aerosol systems, and does a fairly good job of parameterizing the model for selected organic species (dicarboxylic acids). The paper is well-written and is recommended for publication after the following minor concerns are addressed.

Specific comments

Page 8678, line 18. Better to say "...deviations between model predictions and mea-



surements increase ... "

Page 8692, line 21. Eq. (4) should be introduced in the next line after it is mentioned - as opposed to at the end of the paragraph.

Page 8692, line 24. Should it be Eq. (4) instead of Eq. (3)?

Page 8702, line 15-16. "...at higher RH and lower dry size." A preposition seems to be missing in this sentence.

Is ADDEM able to predict deliquescence RH points of organics and mutual DRHs for mixed organic/inorganic systems? If so, then please show some examples and comparisons with available measurements (if any).

Can the authors comment on how much error is expected in predicting water content and mutual DRHs of organic/inorganic mixtures considered in this study if activity coefficients for all the organic species are assumed unity or equal to their pure component (binary solution with water) values? The real question is that how important is it to accurately predict multicomponent activity coefficients of various organics/inorganic mixtures?

Interactive comment on Atmos. Chem. Phys. Discuss., 4, 8677, 2004.

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