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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Modelling the formation of organic particles in the atmosphere" *by* T. Anttila et al.

T. Anttila et al.

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In the following we explain the major changes made to the manuscript.

Response to comments presented by referee #2

Response to specific points:

i) In order to make the model description more comprehensible, we have made the following modifications to Section 3. First, the treatment of the aerosol size distribution is now presented before the description of aerosol processes. Second, the description of aerosol processes (section 3.3) is now more detailed, especially what comes to coagulation. Furthermore, simulations in which the size distribution of pre-existing particles was allowed to develop were conducted (third paragraph of section 4.2).

ii) We emphasize that the differences between cloud droplet and cluster activation are

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already discussed in section 2.2. However, we added a paragraph to the final section in which these differences are stressed (second paragraph of section 6).

iii) This comment is accounted for in section 4.4.

Response to a general point stated in the last page of the interactive comment:

The terminology related to "nano-Köhler theory"(described in Section 2.1) is now revised. For example, we do not refer to "a recently-developed theory" or to "nano-Köhler theory" but use phrases such as "an application of a theory describing activation of..." (last paragraph of Introduction), "applied framework" or "approach" (both in Section 2.1). We also mention explicitly that our approach is based on the traditional Köhler theory (first paragraph of Section 2.1).

Response to a final point:

The value of CS is now corrected.

Interactive comment on Atmos. Chem. Phys. Discuss., 3, 6147, 2003.