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Interactive comment on "Constraining uncertainties in particle wall-deposition correction during SOA formation in chamber experiments" *by* T. Nah et al.

Anonymous Referee #2

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The paper describes results from a series of chamber experiments on alpha-pinene ozonolysis with different initial seed aerosol concentrations. The authors present a model framework and investigate the importance of coagulation on the results and assess the uncertainties in the calculated SOA mass concentrations and yields for four different particle wall loss correction methods. In summary the study underlines the importance to account for particle-wall deposition to get correct SOA yields and to account for coagulation in experiments in which high seed aerosol concentrations are used. SOA formation is still associated with relatively large errors and the quantitative determination of SOA yields is still a challenging task, therefore, the topic of the manuscript is well suited to be published in ACP. The results of the study con-

firm previous work which showed that the seed aerosol concentration does not influence the partitioning of gas phase products to the particle phase and point on the importance of constraining the SOA mass yield uncertainties introduced by the particle wall-deposition correction regardless of the VOC system. These results are not unsuspected, however, the detailed discussion and interpretation of the subtle differences in wall-deposition mechanisms of particles and condensable gases is important for the use of the experimental data from aerosol chamber experiments. The paper is well written and the conclusions made are sound. Therefore, I recommend publication as it is.

Interactive comment on Atmos. Chem. Phys. Discuss., doi:10.5194/acp-2016-820, 2016.