

## ***Interactive comment on “Unambiguous identification of esters as oligomers in secondary organic aerosol formed from cyclohexene and cyclohexene/ $\alpha$ -pinene ozonolysis” by L. Müller et al.***

### **Anonymous Referee #3**

Received and published: 13 November 2007

General comments: The manuscript describes a careful set of experiments to elucidate the structure of dimers in SOA from cyclohexene and alpha-pinene. The synthesis of standards for chromatographic and mass spectrometric comparison with SOA products is especially valuable. I recommend the publication of this manuscript after minor changes listed below have been addressed.

Minor comments: p.13887, line 24: Experiments were performed at alpha-pinene and cyclohexene concentration of 200ppb and 1000ppb, respectively. How were these concentration determined?

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**Interactive  
Comment**

p. 13888, line 9: The residence time in the reactor is about 19min, however filters were collected for six hours &#8211; a much longer time. Since no denuders were used for filter sampling the ozonolysis reactions probably continue on the filter and the overall reaction time is therefore much longer than 19min. A respective remark including potential artifacts should be added.

p.13896, line 10: It is mentioned that humidity did not change the yield of ester formation. However, in the experimental section only dry experiments are mentioned. Please clarify. If water is present in large excess in the SOA particles compared to the amount generated by the ester reaction, it might not influence the equilibrium of the esterification react and therefore I doubt that this is a valid argument against condensed-phase esterification.

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Interactive comment on Atmos. Chem. Phys. Discuss., 7, 13883, 2007.

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