**Atmospheric
Chemistry
and Physics
Discussions**

Interactive comment on "Formation of 3-methyl-1,2,3-butanetricarboxylic acid via gas phase oxidation of pinonic acid – a mass spectrometric study of SOA aging" *by* L. Müller et al.

L. Müller et al.

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The authors thank for the comment and would like to respond below.

Comment: You have calculated an experimental yields of MBTCA of 0.67% and I wonder if in fact this yield is not much more higher. You calculated your yield by dividing the average concentration of MBTCA (0.27 g/m3) by the average concentration of pinonic acid (40 g/m3). However, the yield should be calculated as the concentration of MBTCA formed divided by the amount of pinonic acid which has been oxidised (and

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not the amount present in the chamber). As there is a high rate of gas phase wall loss (and therefore o high rate of pinonic acid on the wall) and a small time of production of OH, it would not surprised me for example that only a small of the pinonic acid injected would react with OH (maybe a few g/m3). It would be very useful to have the this amount. Otherwise, I think that the experimental yields cannot be used.

Reply: The comment is correct. For the yield estimations we assumed complete consumption of PA due to gas phase oxidation. This is now clearly stated in the text. A more precise yield estimation (also indicated in the second comment of Couvidat) would be desirable, however, due to the number of assumptions to be made we consider this approach to be beyond the scope of the manuscript.