

Interactive comment on “Chemical and isotopic composition of secondary organic aerosol generated by α -pinene ozonolysis” by C. Meusinger et al.

Anonymous Referee #2

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General

This is a manuscript on an interesting small flow chamber study on the oxidation of α -pinene by ozone. Its highlight is the isotope analytics.

The thermal desorption isotope analysis of filters is surely a nice and non-standard method which should lead into new insights into VOC oxidation and SOA formation.

The paper is quite technical in a sense as it describes isotope techniques, the new chamber in detail.

What strike me is that there is a number of important results all of which have to be put into the context of what is existing already. What is new here? What has been

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found already and is confirmed?

I would suggest to go through the data of Table 4 and discuss each of, at least, the most important systems. The selection of compounds included into Table 4 is kind of rigorous as it elects 'the 20 ions with the highest concentrations'. There might be other important products being identified when all the results are considered and a more detailed discussion of this finding is warranted to make the paper a more substantial contribution to what is already known on α -pinene SOA from ozonolysis. I am aware that introducing such discussion of results puts a demand on the authors but I think the paper would gain much value and much better contribute to the science related to the system studied here.

I am missing a condensed assessment of literature available which then leads to the selection of Holzinger et al., 2005, 2010a; Winterhalter et al., 2003; Jenkin, 2004; Jaoui and Kamens, 2003 for comparison as listed in Table 3.

Overall, the paper warrants publication subject to a revision somewhere between minor and major.

Details

Abstract: I feel the abstract is very broad, hence should become more specific and highlight the most important quantitative findings. Especially, more substance-specific results should be given.

Experimental: The S/V of the new chamber should be given close to where the volume is mentioned.

Page 7, line 18: This is not a particularly high mass resolution. I would just state '...the PTR-MS had a mass resolution () allowing...