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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Observation of 2-methyltetrols and related photo-oxidation products of isoprene in boreal forest aerosols from Hyytiälä, Finland" *by* I. Kourtchev et al.

Anonymous Referee #1

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This is an interesting and well-written paper concerning the photo-oxidation products of isoprene and the new particle formation in forest. However, there are few questions to be clarified before publication. Authors should consider the following question/comments.

1. Authors used oil films to remove aerosols larger than 1 μm in the Kekati impactor and then they collected the smaller particles on the quartz filter. I want to know the type of the oil used, e.g., silicone oil or petroleum-derived oil (boiling point, or average molecular weight) because I am afraid that oils are partly evaporated and adsorbed

on the quartz to cause a positive artifact of OC. This seems to be likely due to the result, that is, although isoprene oxidation products in summer are one order magnitude more abundant than those of fall samples, OC concentrations in summer are only twice higher than in fall (Table 1). How do you explain that OC stay rather constant value. In fact, the GC/MS chromatogram shows some hump around 40–50 min (Fig. 1). I suspect that you may have a serious hump at the end of the chromatogram, which may be derived from the contamination of oily materials on the quartz filter. Authors can mention about the potential artifact on OC or deny it. If this is the case, the discussion on Fig. 4 needs to be modified.

2. The first paragraph of conclusion section (page 2958, line 25 to line 16 on the next page) is a repetition of the result section. This paragraph could be removed or shortened as a part of summary and conclusion.

3. Meteorological conditions (ambient temperature, relative humidity, etc) should be included in Table 1 if they are available. Authors can discuss the data in relation to the meteorological factors, which should reinforce the points raised in this paper.

Interactive comment on Atmos. Chem. Phys. Discuss., 5, 2947, 2005.