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The authors describe experimental findings of aerosol analysis from the gas-phase reaction of ozone with α-phellandrene based on filter measurement. Analysis has been carried out by a HPLC-MS technique using an Orbitrap tandem mass spec. Reaction conditions were chosen in such a way that secondary chemistry influenced the product distribution. Reactant concentrations are in most cases clearly higher than atmospheric levels. Addition of formic acid, acting as sCI scavenger, repressed bimolecular and most likely unimolecular sCI pathways resulting in changing product distribution. According to that, the authors concluded that sCI reactions are important for the aerosol constituents detected.
From my perspective there are some points that should be considered before acceptance can be suggested.

1) The authors used filter measurements. Nothing is said regarding possible aerosol processing between sampling and analysis. What was the delay time between sampling and analysis?
2) What is the reason for the low RH < 5% in all runs?
3) Unfortunately, there is no pair of experiments with formic acid ON or OFF and otherwise constant reaction conditions. The best pair is Exp.1 and Exp.7 where merely ozone was changed by a factor of about 2. Please show for these experiments the corresponding spectra, especially in the "dimer" range, which should confirm author´s conclusion of the importance of bimolecular sCI reactions for SOA formation. Identified "dimers" as given in table 4 should be marked in the spectra. Please state in the figure caption of all given spectra the EXP. number according to table 1.
4) Experiments have been conducted with higher reactant concentrations compared with atmospheric conditions resulting in higher steady-state sCI (and other product) concentrations as those expected in the atmosphere. Consequently, bimolecular pathways are less important under atmospheric conditions. That should be discussed in the manuscript. Is there any idea regarding the sCI isomer/conformer concentrations in the experiments?
5) The reaction scheme in figure 4 should show how the two 1st generation C_{10} closed-shell products from α-phellandrene ozonolysis as given in figures 2 and 3 are formed. Generally, some simplified reaction pathways in the given schemes are hard to understand. Please be more precise with the reaction equations, they should be "equations".