

***Interactive comment on “Secondary organic aerosol formation from the photooxidation of isoprene, 1,3-butadiene, and 2,3-dimethyl-1,3-butadiene under high NO<sub>x</sub> conditions” by K. Sato et al.***

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Thank you very much for your valuable comments. We reply your comments as follows:

“1. At various places in the text the authors seem to be implying that methacrolein is oxidized in the particles by OH and that this leads to oligomer formation. I think this is inconsistent with the figures and also what has been proposed previously.”

What we really indicate in the manuscript is that oligomers are produced by “gas-phase methacrolein oxidation with OH radicals followed by particle-phase oligomerizations of

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methacrolein oxidation products”. However, we express this process as “the heterogeneous reaction of methacrolein” at various places in the text. Probably, these expressions are ambiguous and will lead readers’ misunderstanding. We revise these expressions adequately at various places in the text.

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