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Interactive comment on "Formaldehyde production from isoprene oxidation across NO$_x$ regimes" *by* G. M. Wolfe et al.

Anonymous Referee #3

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Wolfe et al. introduce airborne observations of formaldehyde and isoprene, a main precursor for formaldehyde. Utilizing box and global models, they examine formaldehyde yields in a wide NOX spectrum. A comprehensive observational dataset on NOAA P-3 during the SENEX campaign is utilized to observationally constrain the box model. The presented quantitative information about formaldehyde background concentrations and formation rates/yields could be used for critical information in interpreting satellite datasets as the authors argued. As a constellation of geostationary satellites will be launched for air composition monitoring, this work will provide highly valuable constraints to retrieve isoprene emission rates using an inverse modelling scheme. I recommend publishing this manuscript in ACP after the considerations of a couple of suggestions

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Interactive Discussion

Discussion Paper

1) Page 31593: As the ISOPOOH interferences on MVK and MACR in the conventional analytical techniques are still controversial and relatively new, I would recommend including the justification for the conclusion of negligible ISOPOOH interferences on PTR-MS and whole air sample-GC-MS techniques in the main text rather than in the supplementary material 2) It would be helpful to discuss about what is the implications of the recently reported faster than expected dry deposition rates (e.g. Nguyen et al. 2015 PNAS) in this study.

Interactive comment on Atmos. Chem. Phys. Discuss., 15, 31587, 2015.