

## ***Interactive comment on “Direct measurements of OH and other product yields from the HO<sub>2</sub>+CH<sub>3</sub>C(O)O<sub>2</sub> reaction” by F. A. F. Winiberg et al.***

**Anonymous Referee #2**

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The manuscript describes measurements of the product yields from the reaction of HO<sub>2</sub> radicals with CH<sub>3</sub>C(O)O<sub>2</sub> radicals. The authors have used a comprehensive model to fit the unique sets of OH and HO<sub>2</sub> radical and product data obtained from chamber studies on the title reaction. These simulations have led to an overall rate coefficient for the reaction of HO<sub>2</sub> with CH<sub>3</sub>C(O)O<sub>2</sub> radicals which is higher than the currently recommended IUPAC and JPL values but is within the large uncertainty of the current recommendations. They have used the GEOS-Chem model to assess implications of their higher rate coefficients and branching ratios. The modeling exercise predicts enhancements in OH concentrations in tropical rainforests and at altitudes of 6–8 km above the equator. The article is very well written, meticulous and authoritative. I find difficulty in finding fault in the measurements since the author discuss convincingly

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and in great detail every possible potential caveat in the measurements and modelling with reference to the latest scientific kinetic and mechanistic understanding of all the processes involved in the complex model. However, in the end it is still a simulation of the results no matter how comprehensive and it would be nice to see if in the future it can be validated by direct experimental measurements.

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