Geophysical Research Abstracts
Vol. 19, EGU2017-19386, 2017
EGU General Assembly 2017

Yields of formaldehyde and glyoxal from ISOPOOH and IEPOX

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Formaldehyde and glyoxal are produced from isoprene oxidation on a global scale. These compounds can be measured via satellite so constraining their production is important for accurate estimates of isoprene emissions in remote locations. Experiments were performed using authentic standards of ISOPOOH and IEPOX under varying NO concentrations to obtain HCHO and glyoxal yields. These experiments were then analyzed using a 0-D box model and the Leeds Master Chemical Mechanism (MCM) as well as an updated MCM that considers recently published literature. These mechanisms fail to capture the production of formaldehyde and glyoxal in these experiments as well as other products: glycolaldehyde, hydroxyacetone and 3,4-dihydroxy-2-butanone. We present an updated mechanism that accounts for the yields observed during these experiments.