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Interactive comment on “Atmospheric oxidation of 1,3-butadiene: characterization of gas and aerosol reaction products and implication for PM_{2.5}” by M. Jaoui et al.

Anonymous Referee #1

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I had one further comment about this manuscript in regards to the 1,4-anhydroerythritol (MW 104) compound observed in the 1,3-BD SOA. The authors should recall work conducted by Lin et al. (2012, ES&T) and Zhang et al. (2012, ACP) by the UNC group. They showed the IEPOX from isoprene oxidation undergoes an acid-catalyzed rearrangement on sulfate aerosol to form cis- and trans-3-methyldihydroxytetrahydrofurans, which are exactly the same as the 1,4-anhydroerythritol found here (minus the methyl group). This is further evidence that 2,3-epoxy-1,4-butanediol (BEPOX) is being formed from the oxidation of 1,3-BD in these experiments and playing a role in forming the SOA constituents found in this study.

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