

Interactive comment on “Biomass burning emissions disturbances on the isoprene oxidation in a tropical forest” by Fernando C. Santos et al.

Anonymous Referee #3

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General This is an interesting study on how biomass burning emissions interact with isoprene (ISO) oxidation under the conditions of a tropical forest studied in the SAMBBA campaign. The paper applies an interesting air mass classification. The OH estimation by an analytic expression should be handled with care. Referencing should be updated through the paper. The real structures / names of 'ISOPOOH' should at least be given once in the manuscript. Maybe the use of abbreviations can be reduced as some sentences become difficult to understand.

How big is the identified increase in oxidation capacity really? Please consider possible uncertainties regarding the analytical OH calculation.

Overall, this paper should be acceptable for ACP subject to revisions somewhere between minor and major.

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Details

Abstract: Maybe the increase of oxidation capacity downwind a BB event can be more clearly put into the abstract ?

Line 29ff : Edit the sentence 'The oxidation of isoprene is higher...'

Line 70ff: It strikes me that this part does not make any reference to the important Caltech studies starting with Paulot et al.

Line 146 ff: How do the authors assure that ISOPOOH does contribute to the measured $m/z = 73$ at all ? Has there been any test for this ? How is the inlet system designed to allow measurement of this species ?

Line 200 ff: Isn't such quasi-analytical approach prone to errors ? How do OH levels calculated by eqn (2) compare to detailed model results ? Can this be compared to establish the validity of eqn (2) ? How uncertain are the OH concentrations calculated ? Is there any chance to compare the analytical results with, say, a 1-D or a box-trajectory model result ?

Line 203: ISOPOOH , not ISOPOHH

Line 363: Maybe I oversee something but what exactly is that 'Sequential reaction approach' ?

Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2017-1083>, 2017.

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