

Interactive comment on “Total OH reactivity over the Amazon rainforest: variability with temperature, wind, rain, altitude, time of day, season, and an overall budget closure” by Eva Y. Pfannerstill et al.

Anonymous Referee #2

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General comments: The manuscript Total OH reactivity over the Amazon rainforest: variability with temperature, wind, rain, altitude, time of day, season, and an overall budget closure by Pfannerstill et al (acp-2020-752) addressed a very interesting topic on closure evaluation of OH reactivity. The measurement data obtained at Amazon rainforest were valuable, the methodology for VOC speciation measurement by using PTR_TOF and data processing for investigation variation of OH reactivity were solid and reasonable. The reviewer considers that the detailed study on OH reactivity of this kind are very much needed, and would suggest acceptance for publication after

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the following suggestion are considered in revising the current version. Specific comments: 1 I wonder why black carbon measurement was mentioned in this MS which was not used for analysis, and would suggest that the authors provide more discussion on VOCs speciation for OH reactivity closure purpose, e.g. key species that were not measured from previous studies; 2 I believe that the contribution of VOCs groups to total OH reactivity could be very different during normal condition (day and night), precipitation, or biomass burning events. The inter-comparison for major VOCs species attributing to OH reactivity would be important and useful; 3 The major concern was the main parameters influencing OH reactivity and the approach to quantify the parameters. The MS did not provide explanation why OH reactivity varied with precipitation process, and I wonder why authors use only temperature to parameterize OH reactivity from biogenic emissions, fig 6 showed clearly the regressions were not linear for temperature, and MEGEN model quantified already the role of temperature and PAR in VOCs emissions.

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