

***Interactive comment on “Oxidant and particle photochemical processes above a south-east Asian tropical rain forest (the OP3 project): introduction, rationale, location characteristics and tools” by C. N. Hewitt et al.***

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This is a very comprehensive overview paper on the results of the OP3 project. Important experiment, very well planned. Extensive ground based and state-of-the-art airborne measurements adds great value to the experiment. It have measured very low values of organic aerosols, VOCs, NO<sub>x</sub> and other species in the free troposphere. The levels of organic aerosols of 60 ng/m<sup>3</sup> were extremely low, much lower than measurements in South America and Africa without impact of biomass burning emissions. As the biogenic aerosols are generally comprised of about 60-70% of organic compo-

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nents, and this means a total fine mode aerosol loading of less than 100 ng/m<sup>3</sup>, that is really hard to believe. I found these very low values hard to understand, because ground level values were smaller but similar to measurements in Amazonia, and with the strong convection in these regions, the organic aerosol concentration should have been 300-800 ng/m<sup>3</sup> at least. I do not think that removal mechanisms could be much stronger in Borneo than in other tropical regions. The issue of the model underestimation of OH concentrations was already measured in other studies in South America, and could reflect the lack of a fully understanding of OH cycling in tropical regions. I think the main issue that the manuscript could be improved is to have more comparisons of the measured values with previous studies in Africa (AMMA) and South America (LBA). Certainly, the individual papers will do this job properly, but as this is the main paper with an overview, it also could improve our knowledge of aerosol and trace gas chemistry if a detailed comparison of OP3 findings versus LBA and AMMA could be done.

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