

Interactive comment on “Analysis of particulate emissions from tropical biomass burning using a global aerosol model and long-term surface observations” by C. L. Reddington et al.

Anonymous Referee #1

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The paper of Reddington et al. investigates the impacts of biomass burning on tropical aerosols. This is done with GLOMAP global aerosol model, evaluated by long-term surface observation of PM_{2.5} and AOD. Specifically, this work compares three different fire emission datasets (GFED3, GFAS1 and FINN) to explore the uncertainty in emissions.

This study aims to “better understand the discrepancy in modeled biomass burning AOD and to ultimately improve estimates of biomass burning aerosol”. While the authors address the contribution of underestimation in biomass burning aerosols to the bias in AOD, it would have been beneficial if they could perform further analysis to see the relative contribution of other factors. For example, if they assume internal mix-

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ing instead of external mixing, what does this do to the modeled AOD bias? Is the uncertainty in RH large enough to explain the bias in modeled AOD?

In summary, this paper is well written. It describes what they did and is easy to follow along. It adds value to the literature on this topic and is worthy of publication in ACP subject to addressing these.

Other minor things:

1. Are the model results also obtained for the year of 2003-2011? I did not see it in the text.
2. I found it difficult to read the tiles for x/y axis and legend in figure 4&8.

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