

Response to Reviewer #2 (technical correction)

We thank Reviewer #2 for their additional comment:

There is just 1 point which needs to be clarified in their response to R2.6. The authors describe how primary VOCs are too volatile and so S/IVOCs are needed for SOA formation. But here, it needs to be acknowledged that the authors refer to S/IVOCs as a broad class of species from all classes: anthropogenic, biogenic and biomass burning. This is important enough to be also mentioned more explicitly in the Manuscript Discussions.

We note that in Section 3.2 (first paragraph) we state:

“As BEACHON was dominated by biogenic emissions (primarily MTs), but GoAmazon had major contributions from anthropogenic and biomass burning sources as well as various biogenic emissions (Palm et al., 2018), the larger S/IVOC is thought to be dominated by emissions and partially oxidized products from the two latter sources.”

To better discuss this point, we have added the following in the conclusions section (additions in bold):

“Like Palm et al. (2016; 2018), our results indicate the importance of S/IVOCs towards aerosol growth in the OFR at both the BEACHON and GoAmazon campaigns. We find that S/IVOCs contribute on average 85% and 39% (BEACHON) and 100% and 66% (GoAmazon) towards the change in total number and volume, respectively, for the exposures modelled in this study.

There remains uncertainty in the sources of these S/IVOCs: they could be directly emitted or formed as oxidation products from both biogenic and anthropogenic sources for BEACHON (Palm et al., 2016) and from biogenic, anthropogenic, and biomass burning sources for GoAmazon (Palm et al., 2018). Further studies are required to better understand, speciate, and quantify S/IVOC sources.”

Finally, we note the following additions to the data availability statement:

“All data shown in the figures pertaining to model results in this paper (including Supplement) are available upon request. **The TOMAS-VBS model code used in this paper is available at <https://hdl.handle.net/10217/190133>.**”

and the acknowledgements:

“This research was supported by the US Department of Energy’s Atmospheric System Research, an Office of Science, Office of Biological and Environmental Research program, under Grant No. DE-SC0011780, by the U.S National Oceanic and Atmospheric Administration, an Office of Science, Office of Atmospheric Chemistry, Carbon Cycle, and Climate Program, under the cooperative agreement award #NA17OAR430001, **and by the #NA17OAR4310002 and the**

U.S. National Science Foundation, Atmospheric Chemistry program, under Grant No. AGS-1559607 and AGS-1558966.”