

Interactive comment on “Ozone stress as a driving force of sesquiterpene emissions: a suggested parameterization” by E. Bourtsoukidis et al.

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Thank you very much for such an analysis. The repercussions of this article for the modelling community are huge, as well as the observational community, since it will improve research questions for the future. Nevertheless, I have a few points that perhaps you should consider. Your observations demonstrate a direct correlation between sesquiterpenes (SQT) and ozone. Nevertheless, I have a few doubts about how you get rid of SQT emissions from cuvette disturbances (line 23, page 7669). You mention how you correct for ozone destruction, but in my opinion it seems a little vague as well as how to get rid of the excess emissions of SQT (as a defence agent) from disturbances made, and also you did not mention how to avoid oxidation of SQT within the cartridges while transport for GC analysis. In addition, it would be nice to see the

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response in another tree of the same species, having in mind that even trees of the same species may have different SQT emissions due to different leaf stage, wound level, etc. When said “the direct relationship observed between SQT emissions rates and ambient ozone mixing ratios can be explained by the fact that the selected branch was in the lowermost level of the canopy (Jardine et al., 2011)” (line 17 page 7674), I believe the authors were not referring/suggesting to lower branches being directly correlated to SQT, but rather a consumption/oxidation of the ozone as it sinks down the profile, evidence for that is that at 11m, not so far off the 5 m of the measurements in this paper the relationship found is negative (Jardine et al., 2011). At last, there are a few parts of the article which are copied directly from other sources without proper quoting, so I would suggest to rewrite in the author’s own words the phases starting in lines: 4-6 (page 7663), 7-9 (page 7665), 21-22 (page 7669), 12-15 (page 7675), 11-14 (page 7680). But regardless these issues above, I believe it is a clear paper which will help greatly to the scientific community on BVOC modelling especially.

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