

Dear Saunier et al.,

**Thank you for your detailed reply. Now I understand where the discrepancy between modeled and measured emission originate from. As I said, one would expect modeled the modeled versus measured comparison to follow 1:1 line (of course with R2 below unity) when the emission factor is obtained with the same data that is used for comparison. In your study, you have used only the slope to calculate the fluxes, disregarding the intercept. In the case of your example, methanol in summer, natural drought, this leads to an underestimation of around 0.05 gC gdw<sup>-1</sup> h<sup>-1</sup>. We can also see from Figure 3-5 of the manuscript that the systematic underestimation occurs for those compounds which exhibit considerable night time emission, and thus intercept on fitting. For compounds with zero nigh time emission the algorithm works much better. The proper way of fitting emission algorithms is to force the intercept to zero, or to describe the intercept, i.e. the light independent emission, with an additional parameterization, as done e.g. in the case of monoterpane emission from boreal trees by Ghirardo et al. (2010).**

*We added in the manuscript that emissions factors (EF) were obtained from correlations between experimental emissions rates (ER) and  $CI \cdot Ct$  or  $C_T$  without forcing data to pass through the origin (this approach is explained in the manuscript and detailed in the Appendix B with the formula).*

*Moreover, in this corrected version of the manuscript, we show the mean of intercept (called B in our manuscript) under each condition (drought treatment and season) in the tables S1 and S2 of supplementary files. We performed also tests to check if our intercepts were different from 0.*

**You should modify the manuscript to reflect the origin of the underestimation in the night time emission of certain compounds.**

*We added in the manuscript a sentence about this point (lines 283-285).*