

Geosci. Model Dev. Discuss., referee comment RC1 https://doi.org/10.5194/gmd-2022-154-RC1, 2022 © Author(s) 2022. This work is distributed under the Creative Commons Attribution 4.0 License.

Comment on gmd-2022-154

Anonymous Referee #1

Referee comment on "Isoprene and monoterpene simulations using the chemistry–climate model EMAC (v2.55) with interactive vegetation from LPJ-GUESS (v4.0)" by Ryan Vella et al., Geosci. Model Dev. Discuss., https://doi.org/10.5194/gmd-2022-154-RC1, 2022

This work gives very nice information on the recent development of global-scale BVOCs emissions modeling with multi-model and components interactions. And there are authors' efforts to evaluate the results with a lot of previous works including scientific reviews. I think this research shows an advanced way of estimating BVOCs with more realistic interactions with Earth components. I have only a few questions and suggestions for the publication as follows.

Figure 7 and 8, and 9: Please make the same y-scale both at the ONEMIS and MEGAN results (middle and bottom panels), such as in Figure 11.

3.3. I understand the author wanted to measure the sensitivity of doubling atmospheric CO2 and vegetational CO2 separately. However, the increasing CO2 influences the vegetational CO2 in reality. The author should mention about "real" future conditions or add the case with scenarios of realistic future conditions of Bio and Atm.

Line: 310: Why does the author think that Both x 2 scenarios showed some exceptions of lower LAI over some places in North America, Western Brazil, and Southern Europe? That

needs a few scientific explanations like partially described in conclusions.