

Geosci. Model Dev. Discuss., referee comment RC2
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Comment on gmd-2022-68

Anonymous Referee #2

Referee comment on "Low sensitivity of three terrestrial biosphere models to soil texture over the South American tropics" by Félicien Meunier et al., Geosci. Model Dev. Discuss., <https://doi.org/10.5194/gmd-2022-68-RC2>, 2022

In this study, the authors perform a sensitivity analysis to different soil texture properties (from the global SoilGrids250m dataset) on the carbon cycle in three Terrestrial Biosphere Models (TBMs), namely LPJ-GUESS, ED2 and ORCHIDEEv2.2. They evaluated the aboveground biomass spatial distribution, ecosystem Gross Primary Productivity (GPP), soil carbon content and drought stress simulated by the three models over the Amazon rainforest region, using model default pedotransfer functions. They found that the model outputs were mainly insensitive to soil texture change, showing the poor representation of the soil-vegetation coupling in the TBMs.

Overall I find the topic very interesting and important to produce accurate simulations in the land surface models. There are some points that I think need to be improved/clarified in the manuscript to be suited for a publication. Please see my comments in the attached PDF.

Please also note the supplement to this comment:

<https://gmd.copernicus.org/preprints/gmd-2022-68/gmd-2022-68-RC2-supplement.pdf>