

Biogeosciences Discuss., referee comment RC1
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Comment on bg-2022-46

Anonymous Referee #1

Referee comment on "Variability and Uncertainty in Flux-Site Scale Net Ecosystem Exchange Simulations Based on Machine Learning and Remote Sensing: A Systematic Evaluation" by Haiyang Shi et al., Biogeosciences Discuss.,
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In this manuscript, the impacts of features such as the machine learning algorithm, the temporal scales of the observed flux data, and the PFT of the flux sites on the accuracy of the model were evaluated by the authors. The results of this study can provide some general guidance for the selection of feature factors during future NEE simulations. This manuscript logic is clear and well arranged, in terms of criteria for article selection, the choice of analysis methods, and the uncertainties in this analysis of the article. While, there are some problems need to be revised before this manuscript can be published, following is the detailed advices.

L34, the 2 of CO₂ should be subscripted;

L63, "soil temperature(Ta)" in parentheses should be "Ts";

L68, It can be expressed as "in models that include multiple PFTs" without writing the full name of the PFT;

L189-191, please rewrite the sentences. I guess the author wants to express that MLR is weaker than ANN, SVM, and RF because MLR did not divide the training and validations sets. The logic of this sentence is confusing because of the inappropriate use of the words "Unexpectedly" and "not worse than";

L230, please add references to support "the lag of precipitation and NDVI/EVI in effect on

NEE";

L431-434, the reference title formatting is inconsistent with others;

Figure 3, there is no scale bar and north arrow;

The 2 in R^2 needs to be superscripted in all figures throughout the manuscript, e.g. Figure 5, Figure 6, Figure 7, Figure 8, etc.