

Interactive comment on “Impact of land use and soil properties on soil methane flux response to biochar addition” by Weiwei Cong et al.

Weiwei Cong et al.

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Received and published: 15 November 2017

Dear Reviewer,

Many thanks for the constructive comments and suggestions on our manuscript (bg-2017-281-SC1). We have carefully addressed all the issues raised by you in the comments. Please find our point-by-point responses under each of reviewer's comments.

Paper was essentially improved, but I still have some suggestions in terms of text improving. 1. Title should be revised and I suggested “Impact of land use and soil properties on responses of soil methane flux to biochar addition: a meta-analysis”.

Response: Thank you for your recommendation. We will revise the Title.

C1

2. Please add the heterogeneity test for the biochar effect among different subgrouping categories.

Response: Thank you for your recommendation. We will add Heterogeneity test for the biochar effect among different subgrouping categories in this study.

3. The authors need funnel plot and fail-safe test to address publication bias.

Response: Thank you for your recommendation. We will add the funnel plot and the Egger's regression to address publication bias.

4. The current organization is descriptive, and no mechanistic understanding is presented. I believe a certain level of theoretical framework would be workable and adds valuable information to the manuscript. I suggest the authors develop a conceptual framework to organize the knowledge.

Response: Thank you for your recommendation. We will expand the conceptual framework in the manuscript.

5. What is the significance of the results to our current knowledge gap? I think the authors may need to discuss it, at least providing some perspectives.

Response: We will add the illustration about the significance of the results to our current knowledge and provide some perspectives for further research.

6. The authors should elaborate on the linear additive models in the discussion, including the scientific and practical significance, and deficiencies and future works.

Response: Thank you for your recommendation. We will add the description of the models to predict methane sink/source strength and added the illustration about the scientific and practical significance, and deficiencies and future works of generalized additive models in the discussion.

7. It would be better to merge the subgraphs together in Figure 3.

C2

Response: Thank you for your recommendation. We will redraw the Figure 3.

8.The red lines in figures are not convincible, since only a few data are in some areas.

Response: Yes, there are only a few data are in some areas. To make the trend are more convincible, we estimated the 95% confidence intervals for the red line, which is showed in shaded bands around the red lines.

9.The manuscript needs to be largely improved in English expression. Here are some problems I found. Line 9, page 3. “the response of soils to biochar addition”, I think is “the response of soil methane flux to biochar addition”. Line3-6, page 4. I am sorry, it is difficult to understand this sentence. Can you explain it better? Line 14, page 4. Please add publication year after “Jeffery et al.”. Line 1, page5. Biochar addition or biochar additions, please check it throughout the manuscript. Line 17-21, page 10. The sentence is too long, please rewrite it.

Response: Thank you for your recommendation. We will rewrite these sentences and check the whole manuscript to make the revised manuscript is readable.

Interactive comment on Biogeosciences Discuss., <https://doi.org/10.5194/bg-2017-281>, 2017.