

***Interactive comment on “Soil organic carbon (SOC) accumulation in rice paddies under long-term agro-ecosystem experiments in southern China – VI. Changes in microbial community structure and respiratory activity” by D. Liu et al.***

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General comments: Thanks for the positive evaluation on the value of this work. We accept the needs for improving the language editing. A general comment is for strengthen the discussion of long term changes. We had cited some of important works on long term ecological changes with regard to C storage in the introduction, such as Turner et al., 2003; Mack, et al., 2004; Chapin III, et al., 2008; Janzen, 2009. Unfortunately,

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the short term changes with these experiments had not been well studied for these sites. Comments on the methodology: We accept the comments on the statistics. While comparison was made between the non-fertilized plot and the fertilization plot, and between the fertilized plots, a TTEST test was employed in fact. In our previous works, we had tried to test the SOC accumulation with soil properties and with nutrient inputs, but not in this study. So here is a mis-statement of the statistics of regression analysis. We had revised the description of the statistics methods in the revised text. Mention of data processing was deleted also in this revised text. Comments of results and discussion. We accept to refine the description of the specific results from the sites and discussion of these resulted strengthened in the discussion section. Some of the statement of results moved from the discussion section to results section. The questions raised were addressed in the discussion section, with some more relevant studies to compare and correlate. Mistakes and errors in figures and tables. Accepted and corrected throughout the text. However, as calculated with subtracting the level of non-fertilizer plot, the label of the axis in Fig. 4 was not changed. The population number changed as “colony abundance as suggested. Thanks for the kind comments and suggestions for smoothing the text and better presenting the results.

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