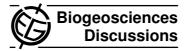
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7, C1579-C1580, 2010

Interactive Comment

Interactive comment on "Effects of free-air CO₂ enrichment (FACE) and soil warming on CH₄ emission from a rice paddy field: impact assessment and stoichiometric evaluation" by T. Tokida et al.

Anonymous Referee #1

Received and published: 25 June 2010

Comments:

CH4 production in the paddy field is an microbial-involved biochemical process which is driven by substrate availability and redox potential. The authors did not find significant effect of elevated CO2 on CH4 emission, which is quite different from that of Xu et al. as the authors mentioned in the text. The SOC contents in current paper and in Xu et al. are 77.8 g kg-1 and 14.9 g kg-1, respectively. Supposing the enhancement of rice growth to elevated CO2 is the same, due to the the higher SOC availability in current experiment, the enhancement of CH4 emission should be much smaller than that of

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Interactive Discussion

Discussion Paper



Xu et al. Indeed the authors' results are the case.

The large CH4 emission difference between ET and NT is just the reflection that higher temperature lead to higher decompostion of SOC and then lead to higher CH4 emission. I don't think the calculation of SOM decomposion by N mineralization in situ can reflect the real SOM decomposion.

As for the relevence of Fe reduction and CH4 emisson, it is a worthy topic to be studied further.

Interactive comment on Biogeosciences Discuss., 7, 1863, 2010.

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