

Interactive comment on “Impacts of climate and reclamation on temporal variations in CH₄ emissions from different wetlands in China: from 1950 to 2010” by T. Li et al.

Anonymous Referee #2

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I think the topic matches the Special Issue “Hotspots of greenhouse emissions from terrestrial ecosystems on global and regional scales”. The draft considered the many aspects in the methane modelling, but some key mechanisms were still missed. The authors should carefully address these questions before any future decision can be made:

- 1: I noticed that the authors used the wetland maps, but it seems that all of them are the “snapshot” of a specific year. The model requires the annual wetland distribution maps; the question here is how did you generate the time series of the wetland maps?
- 2: I noticed the soil temperature is from the TEM results. If soil is frozen, how did you

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handle this situation in the methane simulation?

- 3: The TEM also has the soil moisture as one output. Is there special reason to select other soil moisture as the input rather than using the TEM output?
- 4: For the wetland pixels indicated by your wetland maps, what if their water tables (from TOPMODEL) are quite low? In other words, TOPMODEL and the wetland maps yield the different wetland extent. How to process it?
- 5: What is the time step for your TEM simulation? I remember the TEM is monthly model rather than daily?
- 6: How do you select the decay parameter in the TOPMODEL?
- 7: I also agreed with the suggestion that the authors should provide the brief introduction to their CH₄MOD_wetland model in the Supplemental material.

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