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Biogeosciences Discussions

Interactive comment on "Quantifying methane emissions from rice paddies in Northeast China by integrating remote sensing mapping with a biogeochemical model" *by* Y. Zhang et al.

Anonymous Referee #2

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The manuscript offered an estimate of methane (CH4) emission from rice paddies in Sanjiang plain, one of the major rice producing regions in Northeastern China, by integrating remote sensing mapping with a process-based DNDC biogeochemistry. The modeled results were validated by ground tests and uncertainty analysis was also provided by the authors. The paper is quite valuable not only for the data that are useful to update regional methane emission inventory instead of using IPCC default emission factors, but also for the techniques that integrated remote-sensing with a process-based biogeochemical model for a better estimate. I prefer its publication in Biogeoscience. Below are some minor questions:

1)Better show the difference in methane emission estimation in Sanjiang plain from the present study when compared to that using IPCC default emission factors for rice paddies. 2)For the modeled methane emission, there were large variations (from $\sim$40 to $\sim$900 kg CH4-C/ha). Better give an explanation to the extremely high/low values occurred combining the sensitive analysis results presented in Figure 3. 3) Section "2.3 Model Sensitivity Test" line 7 page 393 of the discussion paper: delete "was".

Interactive comment on Biogeosciences Discuss., 8, 385, 2011.