**Biogeosciences
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Comment

Interactive comment on "Seasonality of ecosystem respiration in a double-cropping paddy field in Bangladesh" *by* M. S. Hossen et al.

Anonymous Referee #1

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General comments: The manuscript presented the diurnal and seasonal variations in ecosystem respiration in a double-cropping paddy field. The relationships among ecosystem respiration, soil water content, soil temperature, and crop biomass were fully discussed, and a simple model was proposed to simulate ecosystem respiration. Two different patterns of the seasonality of ecosystem respiration were found in the Boro and Aman seasons. Globally, the observations in the rice agroecosystems are rare, and could be beneficial to carbon balance modeling. However, there are some issues that need to be clarified.

Major comments: Modeling ecosystem respiration was one of the two main parts of the manuscript. The parameters of the simple model were fitted using the observed data during the growing seasons. However, the model was not validated by other

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independent data. I notice that the measurement started from February 2006. Can you use the data in 2006 for validating? Moreover, the model was only suitable for the growing seasons, but not suitable for the fallow periods (about 144 days per year). Therefore, the model had limitations on modeling annul ecosystem respiration.

Minor comments: 1) Page 8702, Line 4. How did you set theta2 (0.50) based on Fig 6?

2) Page 8702, Line 19. 'annual mean . . .' is incorrect.

3) Page 8704, Line 15. The statement is not well supported because you did not have soil respiration data.

4) Page 8705, Line 20. Why was the scattered data mainly due to the small biomass?

5) Page 8705, Line 22-24. For the Aman season, is it also due to the high temperature in the first drained subperiod?

6) Table 3. Why were b1 and a same for the Boro and Aman seasons? Is it a coincidence? How did you fit the parameters?

7) Fig. 6. What do the error bars mean? How did you get the data points?

8) Fig. 7. The relationship between modeled and estimated RE was not good when modeled RE was near 2.0 gC/m2/d. Please clarify it.

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