

Interactive  
Comment

## ***Interactive comment on “Temperature dependence of coastal wetland ecosystem respiration confounded by tidal activities: a temporal perspective” by X. Xie et al.***

**X. Xie et al.**

hqguo@fudan.edu.cn

Received and published: 6 August 2013

We thank the two reviewers for their comments and suggestions. As both reviewers found the manuscript was difficult to understand, we extensively rewrote and reorganized the manuscript.

To help understand the manuscript, the logic flow was concluded as below: (1) Temperature was generally assumed as the main driving factor of ecosystem respiration, while hydrological change could modify this ER-temperature relationship. Previous research mostly focused on aperiodic hydrological events, like rainfall, spring flood. Thus, little is known about how periodical hydrological change affects ER-temperature relationship,

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper



especially in different time scales.

(2) Data from our two coastal wetland flux sites were retrieved. The two sites were located along an altitudinal gradient, representing different tidal intensity. With these data, we try to explore: a) if the ER shows periodical change in accordance with tidal activity? b) how did tidal activity affects ER-temperature relationship in different time scales, and would tides violate this relationship? and c) if constant temperature sensitivity is feasible in coastal wetland?

(3) The main results are: a) ER did exhibit periodical change at monthly scale, which was similar to periodicity of tidal activity; b) tidal activity altered the ER-temperature relationship, which varied with season. In summer, tidal activity even became the driving factor of ER; c) use of long-term constant temperature sensitivity would induce the confounding effect of tidal activity, and the monthly calculation without tidal effect included performed better.

(4) Compared to the ecosystems that experience aperiodic hydrological events, coastal wetland seems acclimate to the periodical tidal activity, and exhibited similar pattern. The tidal activity regulated ER when temperature is high and constant in summer, while in cold days, temperature became a limiting factor. This kind of tidal influence made typical long-term constant temperature sensitivity do not fit in coastal wetland, and monthly estimation of temperature sensitivity was the most appropriate option. In this case, the estimation of carbon budget of coastal wetland needs to be re-examined.

Frankly speaking, as the non-native speakers, we cannot evaluate the language quality ourselves. To overcome the weakness, we have employed an international scientific editing service to correct the linguistic problems in the revision. If every goes well, we can get the editor's reply in one week.

---

Interactive comment on Biogeosciences Discuss., 10, 4515, 2013.

**BGD**

10, C4086–C4087, 2013

---

Interactive  
Comment

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper

