Geosci. Model Dev. Discuss.,
doi:10.5194/gmd-2016-116-RC2, 2016

Geoscientific Model Development Discussions
Open Access
EGU

Interactive comment on "The importance of process interactions and parameter sensitivity for modelling the carbon dynamics in a natural peatland" *by* Christine Metzger et al.

Anonymous Referee #2

Received and published: 5 August 2016

Metzger et al present an interesting study addressing process interactions and parameter sensitivity for model carbon dynamics in a natural peatland. This is a "heavy" topic and the authors did a good job. Their findings are important and meaningful for both model users and model developer, the latter of whom they overlooked. There are some aspects needs substantial revision. a) There are too many small paragraphs with only one or two sentences. I would suggest the authors to combine them. b) The authors claimed "interactions between parameters" "limited transferability of parameter values between models and even between studies". I am not quite understand the connections between the two topics. It could be great if the authors can elaborate more on this. c) The authors mentioned many times of "CO2 model(s)", which seems improper

Printer-friendly version

Discussion paper

because the Coupmodel is more like a C cycling model, rather than CO2 model. d) This work is not only meaningful for model users, but also for model developers. Nowadays, for example, many researchers develop and use models to predict impacts of climate change on carbon cycling or hydrology, and others. However, many of these models are not integrated or balanced enough representing all aspects (processes/modules). Such model predictions lack of credit for me. I could suggest the authors also discuss this aspect in the discussion section. Overall, I think the paper is publishable after major revision. Some specific comments are: 1) Line 9-10: From my understanding, most previous models focused only one or few modules because their model emphasized only on these module(s) and simplified (overlook) others. Interestingly, this could highlights the importance of the present study. The authors may want to elaborate this point more. 2) Line 13: Please specify the modules to make the reader to easy understand. 3) Line 20: This sentence is hard to understand. Please revise. 4) The introduction contains too many paragraphs and they are not very well logically connected. Please consider to reduce them into 4-5 paragraphs. 5) Line 28: I think these findings will be of critical importance for model development as well. 6) Line 1 in Page 9: What do you mean of “uniform random distribution”? 7) Line 9 in page 9: Has this definition of sensitivity been used by others? 8) Line 21 in page 9: Please explain clearer how the equifinalities was quantified. Figures quality/resolution are low. It is hard to read these figures

---

Interactive comment on Geosci. Model Dev. Discuss., doi:10.5194/gmd-2016-116, 2016.

Printer-friendly version

Discussion paper