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Discussions

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Interactive comment on "Typhoons exert significant but differential impact on net carbon ecosystem exchange of subtropical mangrove ecosystems in China" *by* H. Chen et al.

Anonymous Referee #4

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General comments This is an interesting paper, which evaluates the typhoon effect on carbon and water flux at ecosystem level. As a type of less extreme disturbance, typhoon is not well studied when compared to other extreme events. However, within the context of global climate change, the frequency and intensity of typhoon are predicted to increase, and thus it is urgent to evaluate the typhoon effect on coastal ecosystem. This work presents a creative but thorough evaluation of typhoon effect, which could contribute to our current and future understanding of responses of subtropical coastal ecosystem to disturbance.

Specific comments 1. The authors used data from two sites, which experience different environmental conditions, like tidal activity, weather condition, and dominant plant

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species. We would expect the two ecosystems exhibited different response to typhoon events. But this is not clear in this manuscript. For example, authors can separate the typhoon events occurred in two sites in Fig 4. 2. As the typhoon is generally accompanied by spring tide, and the water amount is undoubtedly larger than the rainfall, we would expect rain play an minor important role when compared to tides. However, the authors concluded rainfall was among the most important factors controlling CO_2 flux, but this didn't make any sense. Meanwhile, the author should consider the interaction between tides and typhoon. 3. The authors should check parameters used in the manuscript. In the manuscript, there are two parameters representing ecosystem respiration, RE and R, which could confuse readers. Also, the dark respiration is generally used at leaf scale, and thus dark ecosystem respiration is somewhat ambiguous. GEP is a parameter used in biology/ecology field, and its values are generally positive, but in this manuscript, it is better to use GEE. 4. The manuscript discussed the resilience of mangrove ecosystem to typhoon, but no data described the changes of NEE before and after typhoon in detail, like day to day. 5-day binned data is a good option to show the typhoon effect, but it can't tell us how quick the ecosystem recovers from the typhoon. 5. how about the relationship between monthly mean wind speed and litter production? Or does there exist a wind speed threshold for litter production? Did the maximum litter production occur after maximum wind speed was recorded, or it depends on the duration of certain wind speed?

Technical concerns P2L2 replace 'litter' with 'little' P2L8 delete 'following typhoon disturbance' P2L10 delete 'were' P2L12 delete 'were' P2L13 daily NEE responses to what factors? P3L3 replace 'has' with 'undergoes' P3L12 replace 'ecology' with 'ecological' P3L18 replace 'litter' with 'little' P4L10 replace 'resulted' with 'resulting' P4L20 replace 'microclimate' with 'micrometeorology' P4L20 What is Re? P4L22 replace 'is produced' with 'occurred' P5L4 replace 'microclimate' with micrometeorology P5L20, P6L2 use 'tidal water salinity ranging' P6L11 replace 'digital micrologger' with 'data logger'. P6L26 replace 'tripping' with 'tipping' P6L27 the TE525mm is the product of Texas electronics. P8L17 add explanations for alpha, GEP2000, and R P9L15 replace

'microclimatic' with 'meteorological' P10L12 is the unit g dw g m-2 yr-1? dw stands for dry weight. P11L26 replace 'litter' with 'little'. Table 2 I would suggest put the model in the main text; No units for all parameters. Fig 2 the axis titles for a and c should be maximum wind speed. Fig 4 the title of y axis for (c) should be RE.

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