

Interactive comment on “Investigation of scale interaction between rainfall and ecosystem carbon exchange of Western Himalayan Pine dominated vegetation” by Sandipan Mukherjee et al.

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We appreciate the anonymous reviewer for reviewing the article. With respect to the comment made on ‘winter rainfall’ this is to emphasize that the rainfall time series used in this study were for the period of 16 Jan, 2014 to 30 Dec, 2016 which include winter seasonal rainfall observation over the site. Furthermore, this is to emphasize that this manuscript is not focused on assessing climatology or dynamics of winter rainfall and/or orographic effect on rainfall over Himalaya as substantial research publications are available for winter rainfall and orographic impact on winter and summer monsoon rainfall over Himalaya (Dimri, 2009, Yadav et al, 2010, Dimri, 2013a, Dimri, 2013b, Ya-

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dav et al, 2013, Mukherjee et al, 2016); rather, impact of rainfall seasonality along with changes in the vapour pressure deficit and air temperature, referred in this draft as 'associated meteorology', were assessed on NEE using wavelet. Moreover, in spite of using wavelet to justify objectives of this article, the article is developed around multi-dimensional application of various wavelet methods; and similar application of wavelet methods can be found in Kwon et al, 2010. The rationale for using the ERA forced CASA-GFED3 model was to test efficiency of a carbon cycle model to simulate comparable scale interactions between ecosystem flux and rainfall variability, and that is explicitly mentioned in line number 5, pp-3 of the draft. Similarly, 'scale interaction' terminology is also categorically explained in line no 34-35, pp-2 and subsequently, bands and periods representing various scales are sufficiently elaborated in the results section which may have been over-sighted by the reviewer. However, we do agree that instead of CASA-GFED3 model, a site-specific model could be used to improve understanding of the interactions between rainfall and ecosystem fluxes. Unfortunately, we do not have access to any finer spatial resolution global/regional ecosystem models that could produce carbon exchanges at sub-daily time intervals. Further, as noted by the reviewer, if the lacuna in introduction and analysis section is highlighted/elaborated by the reviewer, could be addressed.

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