

## ***Interactive comment on “Land–atmosphere interactions in the tropics” by Pierre Gentine et al.***

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Received and published: 14 May 2019

We thank the reviewer for his/her positive comments. Specific comment: Some of section 4 on WTG approximation could be put into a broader context as a way to study multiscale interactions by parameterizing the larger scales. The discussion of the literature on WTG certainly raises awareness of the challenges in linking the larger and smaller scales and provides a way to gain understanding. The motivation for thinking about nonlocal coupling could be clarified slightly, since I don't think the authors are arguing for nonlocal coupling as being dominant over or even separate from the other. For feedbacks, it seems less clear a priori which scales should be most important for future change in the water cycle; and from a model development perspective, the unknown still centers largely on local or subgrid scale processes (e.g. the diurnal cycle of clouds), although the interactions of the 'nonlocal' and 'local' processes are certainly part of that unknown. It seems the challenge is to make progress on modeling the multiscale and

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multicomponent system, and in gaining some understanding (and capability of observing) the overall behaviors of the complex system related to water cycle extremes. This sort of discussion would help wrap up the review in the conclusions. Reply: Indeed the reviewer is correct and we will extend the discussion on scales and how the coupling between scales could be important for convection and extremes.

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2019-12>, 2019.

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