

Nonlin. Processes Geophys. Discuss., referee comment RC1
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Comment on npg-2021-4

Anonymous Referee #1

Referee comment on "Non-linear hydrologic organization" by Allen Hunt et al., Nonlin. Processes Geophys. Discuss., <https://doi.org/10.5194/npg-2021-4-RC1>, 2021

This paper revisits three variants of the Stommel diagrams focusing on 10 spatio-temporal scaling analyses of the underlying hydrologic processes at the base of soil formation, vegetation growth, and drainage network organization. The authors concluded that Hydrologic observations appear to be constrained significantly by the Wilson tectonic cycle of supercontinent origin and breakup. In addition they infer that the subsurface water flow rate plays a key role in hydrologic processes, limiting both crops and natural plant growth, as well as soil formation. Finally they claimed that the influence of surface flow by non-linear dynamics suggests non-linear flow equations plays a key role in the subsurface to the evolution of the shape and position of the flow paths and the architecture of drainage basins. The reviewer congratulates with the authors and suggests the manuscript acceptable as it is.