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Hydrology and Earth System Sciences Discussions

Interactive comment on "Stream recession curves and storage variability in small watersheds" *by* N. Y. Krakauer and M. Temimi

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This is an interesting and useful contribution. However, I would like to point out to the Authors a recent contribution to the subject of recession curves, which, I believe, is relevant to the Authors' reasoning because:

1. power laws of the type $dQ/dt \propto Q^{\alpha}$ are not necessarily linked to a one-to-one relation, say $S \propto Q^{\beta}$, between discharge and the water volume, S, stored within the catchment, as assumed by the Authors. Recession curves for the same catchment and from different events actually show a lack of a one-to-one relation between S and Q.

2. In many cases (mildly steep to steep catchments with neglegible disturbances) α can be linked to the morphological properties of the network rather than to a storage-

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discharge relationship.

3. estimates of α may be biased if performed by pooling together all recession curves from a given catchment.

Particularly points 1. and 3. could affect the results obtained by the Authors.

Marco Marani

References:

Biswal, B., and M. Marani (2010), Geomorphological origin of recession curves, Geophys. Res. Lett., 37, L24403, doi:10.1029/2010GL045415.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 8, 1827, 2011.