

Interactive comment on “Minimum dissipation of potential energy by groundwater outflow results in a simple linear catchment reservoir” by Axel Kleidon and Hubert H J. Savenije

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Received and published: 9 December 2017

The work by the authors is quite interesting. However, the main premise that catchments behave as linear reservoirs needs to be properly reinforced.

It is claimed that large catchments behave as linear reservoirs although hill-slopes and small catchments behave as non-linear reservoirs (line 5). However, many recent studies have shown that large catchments generally behave as non-linear system (e.g., Biswal and Marani, 2010; Shaw and Riha, 2012; Mutzner et al., 2013; Biswal and Nagesh Kumar, 2014; Ben Krewajski, 2016). At least a through discussion on this subject is needed.

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Cannot the concept of "minimum dissipation of potential energy" explain catchment non-linearity?

References:

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2017-674>, 2017.

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