

Interactive comment on “A new approach to model the variability of karstic recharge” by A. Hartmann et al.

Anonymous Referee #1

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General comments

Hartmann et al. present a new modeling approach to simulate the variability of epikarst recharge, based on a well-established conceptual model proposed by Paul Williams in 1983 (Fig. 1 a). The authors transformed this conceptual model into a schematic model structure and identified relevant parameters (Fig. 3). They also did field work, mainly flow and tracer measurements of drip water in a cave below the epikarst zone, and used this data for model calibration and simulations.

This is an elegant, nicely complete and novel paper, presenting a clean and straightforward modeling approach. I recommend publication in HESS following only minor revisions.

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Specific comments

Title: I would suggest “karst aquifer recharge” or “epikarst recharge”.

Abstract, first sentence, “of” is missing. Line 5, do you mean “conceptual” model?

Introduction, lines 18-22: I have read this type of introduction hundreds of times (the famous 25 % of karst water). Almost all karst papers start like this. Please find a more original introducing paragraph.

You may also consider the paper by M. Pronk et al. (2009, Ground Water), dealing with water storage and percolation in epikarst. Many aspects of your approach can also be found in this paper: epikarst storage, sprinkling experiments, natural and artificial tracers, drip water monitoring, etc.

Fig. 8 caption: Remove repetition: relative deviation of relative deviation.

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