Hydrol. Earth Syst. Sci. Discuss.,
https://doi.org/10.5194/hess-2018-557-RC3, 2019

Hydrology and Earth System Sciences
Discussions

Interactive comment on "On the uncertainty of initial condition and initialization approaches in variably saturated flow modeling" *by* D. Yu et al.

Anonymous Referee #3

Received and published: 26 February 2019

This paper studies an important problem of soil water modeling: the uncertainty of initial condition (UIC) through analyzing the effects of different initial conditions on parameter estimation within two data assimilation frameworks. I believe this work provides useful insights to improve our understanding of uncertainty of initial conditions. I would be in favor of publication after the authors addressed the comments given below. Comments: 1. The grammar of this paper needs some improvements, some small grammar errors can be found. 2. The quantification of initial condition uncertainty (UIC) is unclear, especially for the usage of data assimilation method. I don't follow how two methods combined. 3. The purposes of using data assimilation method and its relationships to results and conclusions are unclear. 4. Please be more specific about why using both experimental and field model, and how different their results are. 5. Please describe

more details about the novelty of this paper, it seems there is no new method involved, and I am not sure how useful and novel the conclusions are.

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