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Reply on RC1

Alaa Jamal and Raphael Linker

Author comment on "Covariance-based selection of parameters for particle filter data assimilation in soil hydrology" by Alaa Jamal and Raphael Linker, Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2021-295-AC1>, 2021

We regret that you didn't find much interest in our paper. Clearly, we agree that a one-dimensional model has severe limitations but we restricted ourselves to such a model in the current study for the following reason: the primary purpose of the study was to introduce the concept of real-time dynamic selection of parameters for data assimilation, which to the best of our knowledge has not been reported in previous works. We considered that a one-dimensional model, which is someone trackable, was sufficient to illustrate the approach.

With regard to comparing the proposed method with existing ones, as mentioned above to the best of our knowledge selecting dynamically which parameters should be estimated has not been suggested in the past and hence such a comparison is not relevant. However, we compared the proposed method to straightforward application of data assimilation involving all parameters in order to show that selecting dynamically a sub-set of parameters for estimation leads to improved results