

Interactive comment on “Emulation of an ensemble Kalman filter algorithm on a flood wave propagation model” by S. Barthélémy et al.

Anonymous Referee #2

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The paper titled “Emulation of an ensemble Kalman filter algorithm on a flood wave propagation model” has compared the ensemble Kalman filter (EnKF) to a method based on the Best Linear Unbiased Estimator (BLUE) algorithm, for a shallow water flood wave propagation model.

The main contribution the authors seemed to make is that the background error in the EnKF can be replaced with a computationally cost-effective background error estimator based on the BLUE algorithm. The authors have gone at great length to describe their experiment around this objective, but have rarely quantified the level of cost-effectiveness achieved. Without a demonstration of this contribution, there is nothing new in the paper.

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Additionally, the paper needs to be better organized. For example, in the introduction section in lines 7-25, so much detail was presented without providing enough background information first. The presentation of the results needs improvement, with clear connection and rational between the results.

Grammar should be improved (check your use of ‘is’ and ‘was’), please proof read before re-submission. Few corrections are below:

Page 6965, line 12: insert ‘have’ between ‘studies’ and ‘shown’

Page 6965, line 14: change ‘variationnal’ to ‘variational’

Page 6975, line 7: remove the brackets around “Li and Xiu, 2008” and change to “Li and Xiu (2008)”

Page 6978 line 3: change ‘is’ to ‘was’

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