

Interactive comment on “Computationally efficient calibration of WATCLASS Hydrologic models using surrogate optimization” by M. Kamali et al.

M. Kamali et al.

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Reply to comments of referee #1

1. The main contribution of this paper is locating a set of points, within model acceptability threshold using DACE approach. This is the first time that DACE approach has been introduced in this field. The specific assumption about error terms, as it is mentioned in the paper (formula 2,3) makes this approach very different from similar ones such as response surface method. The results in table 2 show that this technique finds many more representative parameter sets than Monte Carlo and Latin Hypercube Sampling.

2. Hydrologic model calibration has been the subject of numerous research papers

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for at least two decades; therefore, there is a very rich literature on this subject. The huge volume of this literature forced us to focus only on the part that was related and of similar nature to our work such as Duan et al. and Mugunthan et al..

3. Our proposed technique was not compared to any other methods except Monte Carlo and Latin Hypercube Sampling, since there was no way of comparing two methods with different targets. (Please note we did not claim that this technique is able to find the best set of parameters.)

4. Since Nash coefficient, a well known comparison criterion in the field was chosen as the error criterion, it did not seem necessary to display model performance and its corresponding simulation results. In addition to that, it was not possible to put the simulation results of all behavioral parameter sets (at least one hundred) in a short paper.

Referee #2

5. Please refer to previous notes.

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