

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

### **Anonymous Referee #2**

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#### General Comments:

In this paper, the authors attempted to present a method, the so called DACE, useful in calibration of hydrological models. The study was built on the DACE method introduced by Jones et al. (1998). The paper is lacking few qualities which make it inappropriate for the publication in HESS considering the mission of this journal and the expectations of its readers. The following comments provide a more detailed evaluation of this study.

#### Specific Comments:

1. The paper does not change the status quo in the current calibration method applicable for hydrologic models. As mentioned above, the work has been built on the previous

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effort and it is unclear what the main contribution of the authors is in this paper.

2. The authors don't really convey or exploit the richness of the calibration in particular in hydrologic applications. In fact the paper does not provide a sufficient literature review showing the state of the science in this subject. Obviously there are many other optimization methods suitable for hydrologic models but they were not addressed in this paper.

3. I think the major rewriting is needed. The paper is lacking proper English syntax where many erroneous sentences are also seen. Editing the paper by someone whose native language is English is warranted.

4. Presentation of the work does not appear to be strong enough. For example the abstract is not general enough that a reader can comprehend what is going on in the full paper. Another example is about the results which have not been demonstrated properly, not even using a figure to display the simulation results compared to the observation. Also a comparison with popular calibration technique is necessary to convince the readers on the advantages of DACE technique they are presenting.

5. The presentation style does not seem to be appropriate as a discussion paper, instead it seems more suitable for a conference proceeding providing that the above modifications are implemented.

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