

***Interactive comment on* “Quantifying input uncertainty in the calibration of water quality models: reshuffling errors via the secant method” by Xia Wu et al.**

Anonymous Referee #2

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This paper developed a new algorithm called BEAR for accurate quantification of input errors in water quality modeling. The precondition of the BEAR algorithm is that the input uncertainty should be dominant and that the prior information of the input error model can be estimated. Results of both synthetic data and observed data indicated the efficiency of the algorithm. Overall, the paper is well rewritten and the topic is suitable for the journal. However, the following issues should be further explained and clarified before its submission: (1) There have been many studies focusing on the uncertainty of input data errors for hydrologic modelling, and many methods including Bayesian algorithm can be used for handling the issue. However, the gap between previous studies and this study was not explained clearly in Introduction. The motivation

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of this study should be clearly clarified. (2) More detailed steps about how to use the BEAR algorithm should be explained. Besides, the advantages of the BEAR algorithm compared with conventional methods should be more clearly clarified for making clear understanding from readers. (3) Actually, the availability of prior knowledge of the input data error is important for modelling, but is also a difficult issue. It may be not enough only mentioning this issue in Conclusion. At least more discussions and the potential solutions should be provided. (4) The quality of some Figures in the manuscript should be improved to make all information clear.

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