

Interactive comment on “Improving multi-objective reservoir operation optimization with sensitivity-informed problem decomposition” by J. G. Chu et al.

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The paper presents a demonstrably useful technological addition to the multi-objective optimization of reservoirs – to start with the sensitivity analysis to reduce the number of variables influencing the result (employing the Sobol's sampling) and thus reducing the dimension of the optimization problem. This method has a universal applicability in many problems (is widely used e.g. in models calibration to reduce the dimension of the corresponding optimization problem), and its demonstration for reservoir operation is indeed of value. It will be of interest to the readers of HESS.

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The referees present a number of useful comments many of which have been taken care of in the authors' Responses. I am happy to see that a number of issues/comments that I initially planned to put forward, have been already raised by reviewers. I fully support the comment that this method can hardly be named “domain decomposition”.

I reviewed all the comments (very useful indeed) and responses (quite comprehensive and clarifying many reviewers' questions), and at this stage I don't have much to add. I am forwarding the updated manuscript to referees for their evaluation.

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