

Interactive comment on “Calibration and evaluation of a semi-distributed watershed model of sub-Saharan Africa using GRACE data” by H. Xie et al.

Anonymous Referee #1

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The submitted study by Xie et al. provides very interesting research. They use water storage variations (WSV) from GRACE gravity data in order to calibrate the hydrological model SWAT for the Sub-Saharan Africa and critically analyze the results in order to improve the model and the calibration technique for future studies.

The study is very up to date. The manuscript is written very carefully from language and content perspective. It provides a detailed and comprehensive work. It provides a careful explanation how the analyses were done, so the reader can get sufficient inside in the strategies and methods used. I am also very convinced of the methods

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that were used (e.g. equal filtering of the models, removal of lake storage variations in the GRACE WSV). The study is very relevant for the ongoing scientific developments in application-developments of GRACE data in modeling hydrology and toward GRACE WSV being an important data set for validation of for large scale hydrological models. Furthermore, application of GRACE data for SWAT model calibration hasn't been done before.

I am very convinced of the presented work and found nothing to be criticized technically, in language or in the scientific discussion. Therefore I recommend to accept the manuscript and publish it as it is.

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