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Reply on CC1

Youjiang Shen et al.

Author comment on "High-resolution water level and storage variation datasets for 338 reservoirs in China during 2010–2021" by Youjiang Shen et al., Earth Syst. Sci. Data Discuss., https://doi.org/10.5194/essd-2021-470-AC1, 2022

Dear Zhaokai Wang,

We appreciate positive feedback on our work. We checked these three reservoirs you mentioned, the statistical metrics on water level and RWSC can be found in our datasets, including time-series and error reports for all reservoirs (e.g., time-series of rwsc 93/232res.pdfs). Please note that you collected in-situ data before 2016, are not available from our side. We obtained daily water level and storage data spanning 2015–May 2021 for 93 reservoirs in this study. Thus, we might fail removed some outliers for these three reservoirs. We added this issue and demonstrated our "Advantages and Limitations" in the main text**.** Anyway, we would conduct a data quality control again in our final dataset. Moreover, this dataset will be updated regularly, and we will introduce more general algorithms with better performance and include more satellite missions. The associated paper would be our next paper, but as a supplement of this work.

At this stage, we generated the remotely sensed datasets with highest level of confidence on the quality and novelty of datasets. We provided different levels of processed satellite datasets, which can be used for users for different purposes. We agree that some outliers may exist and can be attributed to the fact of error in satellite water level or area, or a combination. Nevertheless, over 75% reservoirs evaluated by in-situ observations fall into the good category showing NRMSE values of RWSC below 20%. More than 85% reservoirs evaluated by in-situ observations fall into the good category showing RMSE values of WSE retracked by these four altimeters below 1.0 m. We will continue to mine and optimize the algorithm as described in the article in future development, for better satellite-based water level estimation.

Kind regards.