

Interactive comment on “Dynamics of green and blue water flows and their controlling factors in Heihe River basin of northwestern China” by Kaisheng Luo and Fulu Tao

Anonymous Referee #1

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The manuscript tackles the issues of assessing (a) blue and green water fluxes as well as (b) the key factors controlling these. It is framed as a textbook application of very well known techniques to specific settings, as rendered by diverse counties in a part of China. Basically, the authors ground their analyses on the use of the Soil and Water Assessment Tool (SWAT) and employ diverse metrics (which are not 5 statistical approaches, as claimed by the authors) to assess the goodness of their results. Frankly, the level of scientific originality of the study, in terms of theoretical developments and conceptual advancement, is rather limited. Additionally, the relevance of the diverse quantities which are considered as potential controlling factors is tested with methods which do not assess the contribution of each of these factors to the variability of the

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target state variable. As such, it provides at best an incomplete picture and does allow to draw general conclusions nor to obtain a robust and quantifiable uncertainty assessment. It is also not clear how the authors include quantitatively issues such as measurement uncertainty in their analyses.

Given the above issues, and considering the significantly application-oriented nature of the work, I would recommend it to be released from HESS. Implementing a robust uncertainty analysis as well as innovations in the methods employed would require a set of revisions going beyond the scope of major revisions. I think the authors would be best served if they submit their work to a more application-targeted Journal. I am afraid I cannot be more positive at this time.

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