

We thank the anonymous referee #2 for his/her comments and suggestions to our manuscript.

Comment: Using the SWAT model and an elasticity method, the authors presented how the runoff responded to the variation of the climate over the YRB in China. The results that precipitation and other climate variables have different impact on the runoff over different periods are interesting. The manuscript is well written in most part, while English needs to be improved. I recommend publishing this manuscript after minor revisions by including the following comments and questions.”

Response: Thanks for the comments. The English of this manuscript has been polished.

Comment: P.4490, lines 4-6, I am not sure I understood this sentence.”

Response: We have modified the sentence. “The engineering measures such as reservoir regulations should play a major role in maintaining the river flow in the recent years. However, little is known about the effects of climatic change on recent streamflow change.”

Comment: P.4490, line 16, in fact precipitation is also a climate variable. Also in Lines 23-24 in P.4500”

Response: The sentences have been modified to avoid confusion.

Comment: P.4493, lines 14-15, I suppose that the study area be semi-arid to semi-humid regions”

Response: Thanks for the suggestion. It has been corrected.

Comment: P.4493, line 20, As the naturalized streamflow, is key part of information, more detail is needed for that variable on data source and processing approach

Response: Thanks for the suggestion. We have added a brief description of the naturalized streamflow.

Comment: P.4494, and some other places, be cautious when using climate change, as this manuscript is in fact more about climate variability instead of climate change.

Response: Thanks for the suggestion. We have replaced climate change with ‘climatic change’ or ‘climate variability’ throughout the manuscript.

Comment: P.4495, the albedo. Should this be different for different vegetation cover, as 0.23 is a hypothetical choice?

Response: We used the albedo for net radiation (R_n) and potential evaporation (E_0) calculation. The albedo was set according to hypothetical reference vegetation following the FAO Penman-Monteith method (Allen et al., 1998). The albedo does not affect the E_0 calculation. It

may affect R_n calculation and then affect the elasticity analyzes. We have tested the sensitivity of the elasticity analysis to albedo change and found the impact of albedo is negligible. We have revised the statement to avoid confusion.

Comment: Regarding the use of the elasticity method, I suggest to plot the estimate of monthly or yearly runoff by the Budyko-type curve against the observation, which is similar to Fig.3 before doing those attributions.

Response: The reliability of the Budyko-type framework is greatest when applied using long-term averages. It may not be suitable for monthly or short-term estimates. Our results (Table 3) indicate that the elasticity method works well at decadal scale in the Yellow River basin.

Comment: Equations 6 and 7, as the NS efficiency is related to the R^2 and you used one of them anyway, I suggest just present one of them.

Response: Thanks for the suggestion. We have removed R^2 and now just NS efficiency is presented.

Comment: P.4498, line 7, is in line with

Response: Thanks for the suggestion. It has been corrected.