

Interactive comment on “Seasonal cycles and trends of water budget components in 18 river basins across Tibetan Plateau: a multiple datasets perspective” by Wenbin Liu et al.

Anonymous Referee #2

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The paper presents a very interesting study, by which the authors investigated general water budgets and trends in water balance components in 18 river basins in the data-sparse Tibetan Plateau from the perspective of multi-sources datasets. In my opinion, it is a good attempt to understand the hydrological regimes in TP basins in the big data era. The manuscript is overall well-organized and should fall into the aims and scopes of HESS. I do not find major problems with this manuscript and recommend accepting it only after a few minor revisions.

Major Comments: (1) In the methodology, I suggest to present more detail about “the modified MK method”. You may think to add it as an appendix. (2) Though an exhaustive literature review has been done. However, some recently published ones are

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missing, for example, Xiang et al. (2016); Dong et al. (2016).

Xiang, L., Wang, H., Steffen, H., Wu, P., Jia, L., Jiang, L., and Shen, Q.: Groundwater storage changes in the Tibetan Plateau and adjacent areas revealed from GRACE satellite gravity data, *Earth Planet Sc Lett*, 449, 228-239, 2016. Dong, W., Lin, Y., Wright, J. S., Ming, Y., Xie, Y., Wang, B., Luo, Y., Huang, W., Huang, J., Wang, L., Tian, L., Peng, Y., and Xu, F.: Summer rainfall over the southwestern Tibetan Plateau controlled by deep convection over the Indian subcontinent, *Nature Communications*, 7, 10925, 2016.

Details points: (1) Language: The language is clear. Throughout the manuscript, I suggest to add "the" before TP or Tibetan Plateau or other proper nouns. Please do check them. (2) line 84: "locates" to "located" (3) Line 131-137: Instead of describing the structure of this paper, you should indicate the aim/objective of this study. (4) Line 182: As the mean annual precipitation ranges from 128-717mm, the RMSE (8.34mm/month=100mm/year) seems not so "perfect". Please tone down this sentence. (5) line 238, which interpolation method was used? Linear interpolation or others? (6) line 263, what is the unit for MG? It should also be specified as P and Q. (7) line 330, how did you classify the basins into westerlies-dominated, Indian monsoon-dominated and East Asian monsoon-dominated basins? (8) line 836, Unit of RMSE in Figure 3b should be added. (9) Figure 10, in the subplot for Xining station, the Q/P declined/increased or closed to zero?

Interactive comment on *Hydrol. Earth Syst. Sci. Discuss.*, doi:10.5194/hess-2016-624, 2016.

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