

Interactive comment on “A discrete wavelet spectrum approach to identifying non-monotonic trend pattern of hydroclimate data” by Yan-Fang Sang et al.

Anonymous Referee #2

Received and published: 12 May 2017

The authors present a discrete wavelet spectrum (DWS) approach to identify the non-monotonic trend in the temperature and potential evaporation time series and to quantify the statistical significance with significance testing. The paper is well written and the research is within the scope of HESS. However, I don't think it meets the standard to be published in HESS due to below reasons.

1. DWS is a well established approach and has been widely applied, especially in signal analysis. I simply cannot see the novelty despite the authors stated they developed a new DWS approach. The novelty should be further elaborated and highlighted should the authors consider to revise and resubmit to another journal.
2. Application of DWS is limited on time series trend identification. Data interpretation

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is indeed important to understand the hydro-climate system. However, it would be much practically useful if the application can be extended to trend/data forecasting.

3. The analyzed hydro-climate data are averaged time series over 740 meteorological stations over China, if I understand correctly. By averaging, the features related to different climatic regimes, geological characteristics and geographical locations, etc. will be filtered out. To analyze the time series with different features would be of more interest and revealing than just to analyze the averaged data. Also, I don't think a time series with 53 annual value is long enough to detect the reliable trend.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., doi:10.5194/hess-2017-6, 2017.

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