

Interactive comment on “Linkages between ENSO/PDO signals and precipitation, streamflow in China during the last 100 years” by R. Ouyang et al.

Anonymous Referee #2

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This paper elaborates the separate and combined influences of ENSO / PDO signals on monthly and annual precipitation over China across a period of 100 years (1901–2009). The authors use monthly and annual runoff data for their analysis of four river basins (Songhua River basin, Yellow River basin, Yangtze River basin, and Pearl river basin) from north to south of China.

The ENSO (El Niño and La Niña events) and PDO phases (warm / cool) were used to stratify the precipitation and streamflow time series for analysis. The precipitation and streamflow time series includes monthly (multiple year mean value) and annual (sum of monthly) values. Wilcoxon signed ranks test were applied to identify if significant

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differences exist in average precipitation and streamflow between PDO warm and cool phases, as well as between El Niño and La Niña periods. Then the impacts of ENSO and PDO, as well as their combined impacts on precipitation and streamflow were quantified.

The topic of the MS is interesting and within the scope of HESS. The paper is well-structured but language revision would improve the readability of the MS.

Before to get published the authors have to discuss the following issues in more detail:

1. In addition to biophysical factors (as precipitation) streamflow is affected by human activities. As the authors mentioned and many studies have shown the streamflow of large river basins in China have significantly changed over the time. Numerous studies have shown that these changes were caused by human activities. Against this background, to link the ENSO / PDO signals to streamflow makes therefore only sense if there is no significant change / trend (trend test) in streamflow over the entire study period.

2. The authors discussed in the introduction that if a strong relationship between streamflow and ENSO / PDO can be found, streamflow forecasting can be improved. However, the authors did not return to this issue in the result / discussion section. What is the contribution of this study to use ENSO/PDO signals as a potential predictor for streamflow forecasting?

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