

Interactive comment on “Climate information based streamflow and rainfall forecasts for Huai River Basin using Hierarchical Bayesian Modeling” by X. Chen et al.

Anonymous Referee #2

Received and published: 9 December 2013

General comments

This paper presents a two-level Bayesian model aimed at forecasting multi-site rainfall and streamflow based on exogenous climatic conditions. The methodology and its application to the Huai River Catchment are well introduced. A suite of interesting results are presented and the main finding is that “the seasonal forecasts developed using climate precursors contain useful information”. I agree on the general merits of this method which was already thoroughly discussed in a peer-reviewed publication. However, I am not convinced that the application of this approach to the Huai River Catchment leads to robust findings that are valuable enough to inform the research

C5680

community or regional forecasting practices. This is mainly because of the lack of an in-depth discussion, in which the authors are expected to explain the identified uncertainties and station similarity using their best understanding of the underlying physical processes. The structure of this manuscript is also confusing at several places. I therefore suggest a major revision.

Specific comments

1. Figure 7 indicates some consistent patterns across different metrics. Could this be related to the geographic locations of these sites? To facilitate a spatial assessment, I suggest using the same site labels (either numbers or abbreviations) for all figures.
2. Compared with other forecasting studies that involve the same performance metrics or similar climate variables used in this study, how is the forecasting performance of this study?
3. What is the most important information that this study can offer for real-world forecasting practices?
4. The description of three performance metrics accounts for a large portion of Section 4. This content should be moved to the Methodology Section.
5. Section 5 is just a short summary with brief thoughts on future work. Nothing is really discussed here.
6. Figure 1. No need to show the entire Huai River Basin, as the study area is the Huai River Catchment only.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 10, 11559, 2013.

C5681