

## ***Interactive comment on “Climate change and its impacts on river discharge in two climate regions in China” by H. Xu and Y. Luo***

### **Anonymous Referee #2**

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General comments: Impacts of climate change on discharge in two typical climate regions were analyzed in this study. Climate change scenarios were generated by downscaling from multi-GCMs outputs. The impacts of climate change on river discharge were assessed by using the SWAT model. The conclusion obtained in this paper provides a valuable reference for related studies such as the assessment for the impact of climate change on water resources, and climate change impacts and adaptation strategies. The authors stated the problem clearly, and their results are sufficient to support the conclusion. There are, however, some points that the authors need to provide more clear information.

Specific comments: 1) Section 2.2.1: Because the two catchments investigated are located at the semi-arid climate region and the subtropical humid climate region, re-

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spectively, whether the SWAT model is suitable for two different climate regions? It is better to add more detailed descriptions on model development; 2) Lines 10-13, Page 7104: Which kind of data series were used for model validation? 1961-1997 and 1961-1994? or 1991-1997 and 1991-1994? 3) Titles of the section 3.1.1 and 3.1.2 are more suitable for “Changes of annual. . . . .” and “Changes of seasonal. . . . .”; 4) Section 3.2.3: Extreme discharge analyzed in this paper is the annual mean discharge. It is better to use daily flow data for extreme events. Because short time scale data is more representative for extreme events; 5) Line 24, Page 7110: Q50 is usually described for a 50th percentile value rather than a mean value. Therefore, it needs to be clarified whether the 50th percentile or the mean value is used in this study?

Technical corrections: 1. Line 15, Page 7106: “Huangfuchan” should be “Huangfuchuan”; 2. Figure 7: Please add units for the x axis.

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