

Dear Editor and Reviewers:

Thank you for your letter and for the reviewers' comments concerning our manuscript # hess-2014-350 entitled "Prediction of extreme floods based on CMIP5 climate models: a case study in the Beijiang River basin, South China".

Those comments are all valuable and very helpful for revising and improving our paper, as well as the important guiding significance to our researches. We have studied comments carefully and have made correction which we hope meet with approval. Revised portion are marked in red in the paper. The main corrections in the paper and the responds to the reviewer's comments are as flowing:

Responds to the comments:

1) you didn't really address one of the reviewers' comments on elasticity, you looked at precipitation independently from discharge but you could have looked at the elasticity itself.

Response: We thank the Reviewer for the comments. We are sorry for our unclear explanation on elasticity of floods to extreme rainfall. To make it more clear, we further gave the percent changes of floods (AMX1d and AMX7fv) in response to the precipitation (AMX1p and AMX7p) (Table 2 in the revised manuscript). The projected changes in floods were found to be closely associated with the changes in precipitation during the two future periods (2020–2050, 2050–2080). Overall, the floods changes are very sensitive to precipitation changes in the study region. For more detail information, please see the last paragraph of Section 3.5 in the revised manuscript.

2) p2 line 7: modify are projected to show

Response: We thank the Reviewer for the comments. We have changed “are projected to show” to “are expected to show” according to the reviewer’s suggestion.

3) line 19 p5: what about anthropogenic changes like land use change?

Response: We thank the Reviewer for the comments. In the study region, the variations in flood risk are not only influenced by precipitation but also by human activity. However, a recent study found that although human activities (e.g., soil and water conservation measures and land use change) have probably affected the flooding process in the Beijiang River basin, precipitation variability is still the main factor of flood formation (Wu et al., 2014). Thus, anthropogenic changes (e.g. land use change) can be currently ignored.

Reference:

Wu, C., Huang, G. 2014. Changes in heavy precipitation and floods in the upstream of the Beijiang River basin, South China. *Int. J. Climatol.*, doi: 10.1002/joc.4187.

4) in the conclusion I would add some caveat on the variability observed in your study and possible longer discussion on the matter.

Response: We thank the Reviewer for the comments. According to the Reviewer’s suggestion, the conclusion has been enhanced by adding more important and interesting information. Meanwhile, we also add some discussions on the deficiency of this paper and future work that need to be done. For more detail information please see Section 5 Conclusions in the revised manuscript.