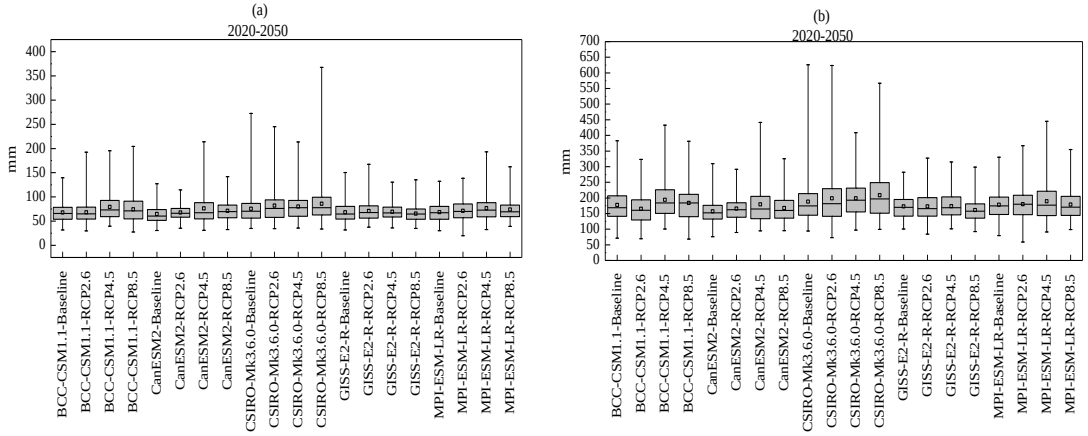
General Comments: This manuscript investigates the implications of climate change on the future flood hazard in the Beijiang River basin in South China, using the Variable Infiltration Capacity (VIC) model and five AR5 GCMs with 3 emission scenarios. The subject matter falls within scope of HESS. I therefore recommended an acceptance after a minor revision.

We would like to sincerely thank the anonymous reviewer for her/his valuable comments. Those comments are very helpful for revising and improving our paper, as well as the important guiding significance to our researches. The main corrections in the paper and the responds to comments are as flowing:

1. I think the increase of future floods mainly result from the increase of extreme rainfall. It is better also showing the changes of extreme rainfall in the future and explore the elasticity of floods to extreme rainfall.

Response: We thank the Reviewer for the comments. According to the Reviewer' suggestion, we added the analysis on changes of future extreme rainfall (Figure 5 below) in the manuscript, and found that the projected changes in floods are most closely associated with changes in precipitation. This means that increase of future floods mainly result from the increase of extreme rainfall in the study region. For more detail information please see Figures 5 and 6 below.



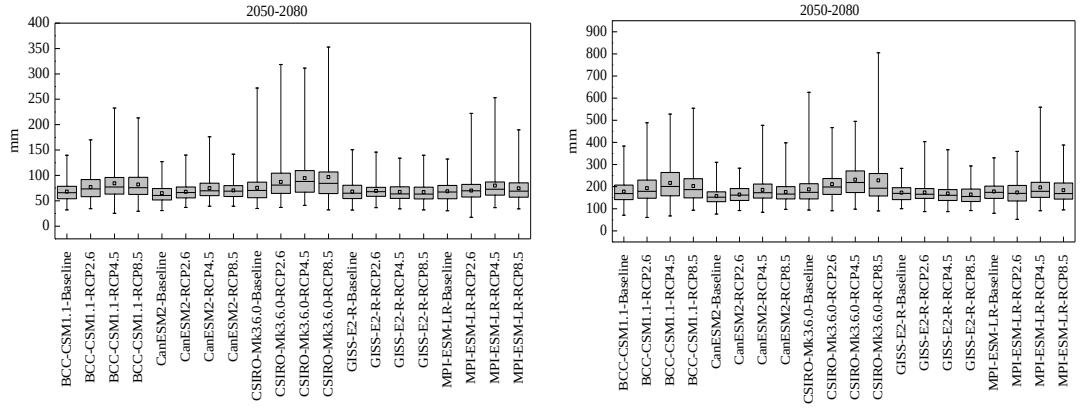


Figure 5. Uncertainty range of (a) AMX1p and (b) AMX7p under different emission scenarios. Box plots: the central mark is the median; the small square inside the box is the average; the box-edges are the 25th and 75th percentiles; the whiskers extend to the 1st and 99th percentiles.

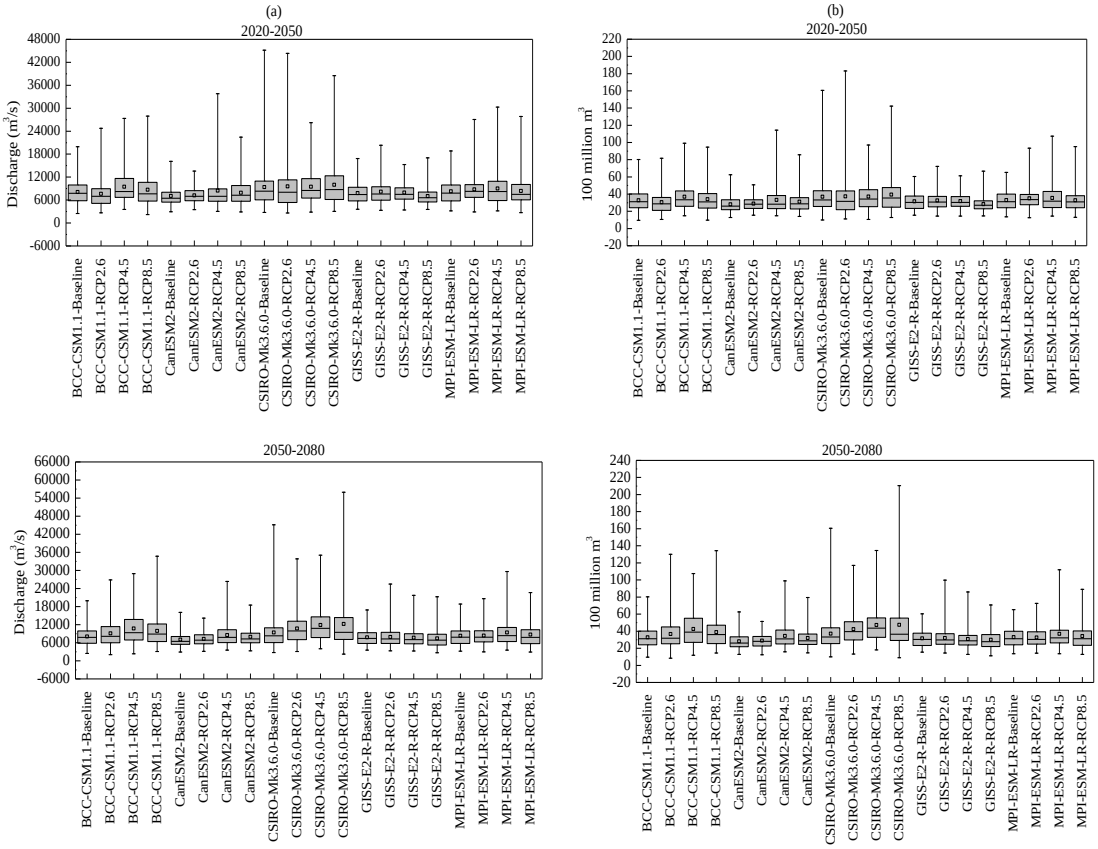


Figure 6. Uncertainty range of (a) AMX1d and (b) AMX7fv under different emission scenarios. Box plots: the central mark is the median; the small square inside the box is the average; the box-edges are the 25th and 75th percentiles; the whiskers extend to the 1st and 99th percentiles.

2. A scientific concern is how reliable the results are given the mixed signs (increase and decrease) of future changes. I fully understand it is from the uncertainty of GCMs. But a comparison of the observed trends in the last 50 years might be very useful, and there are many studies of extreme rainfall/streamflow in the literature.

Response: We thank the Reviewer for the comments. In this study, we used five GCMs, three emission scenarios and ten downscaling simulations for each emission scenario to discuss the possible range of projected changes in extreme floods. Although the mixed signs (increase and decrease) of future changes were shown, most GCMs project an increase in extreme floods during the two future periods (relative to the baseline period 1970–2000). Furthermore, the mixed signs were mainly driven by the uncertainty from GCMs and emission scenarios. We quite agree with the reviewer that a comparison of the observed and simulated trends in the last 50 years is useful. If we do so, the statistical downscaling method needs to be re-processed for the data of the past 50 years (originally we only downscaled the precipitation and temperature in the past 31 years, i.e.1970-2000). Due to limited space of this paper and large amounts of data which must be processed, it is difficult for us to go into a deeper analysis. However, this will be of primary concern for future research.