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Hydrology and Earth System Sciences
Discussions

Interactive comment on "More frequent flooding? Changes in flood frequency in Pearl River basin, China since 1951 and over the past 1000 years" *by* Qiang Zhang et al.

Anonymous Referee #2

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This study addressed flood risk in the river basin of southern China based on observed flood flow data and historical flood data. Therefore, the time span this study concerns is of recent 1000 years. In this sense, I think it is an impressive work analyzing flood risks from a long term perspective. In addition, this study also evaluated flood frequency and flood risks using GEV and kernel estimation method. Some interesting results and findings were achieved such as no abrupt changes or significant trends can be detected in peak flood flow at most of the stations. This finding is interesting which provides an exceptional case about flooding risk in humid regions to global climate changes. Because many researches indicated amplification of flooding risks over the globe. Besides, different changes in floods were observed in different parts of this

river basin, i.e. the Pearl River basin: the occurrence rate of floods was increasing in middle Pearl River basin but decreasing in the lower Pearl River basin. I did find this study pretty interesting. I prefer to take it as an exceptional case study for regional flooding responses to global climate changes, which sheds new light on human understanding of responses regional hydrological cycle to global warming. In general, this paper was well written with good logic and syntax. Besides, this paper also reads well and was well organized. In this case, I prefer to suggest acceptance after pretty minor revisions as suggested below: (1) In the Data section, more details of the dataset should be provided such as are there any missing data in the streamflow dataset? How to process these missing data if any? (2) Are there any missing data in the precipitation dataset? How to process these missing data if any? (3) casualty rates should be changed to mortality in line 174. (4) flood-damaged and flood-affected farmland areas should be changed to flood-damaged and -affected cropland areas. (5) In line 182, had missing information should be changed to contained missing information. (6) In line 192, ...has been using widely. . .. . .should be changed to . . .. . .has been used widely. . .. . .. (7) In lines 192, 193, . . .and also used in this study. . .should be changed to . . .and was also used in this study. . . (8) Topic of 3.3 section, i.e. "Kernel density estimation " should be changed to "kernel density estimation" (9) Kernel density estimation in other parts of the main text should be changed to kernel density estimation.

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