Public justification (visible to the public if the article is accepted and published):

Dear authors,

There are still some minor comments. Please have a look and revise accordingly.

Regards,

Handling editor

Response: Thank you very much for the careful review and constructive comments of handling editor and all the reviewers. We revised this manuscript substantially and provided the point-by-point responses to all the comments and suggestions of reviewers accordingly. All the revisions were highlighted using track changes and blue words in the manuscript.

Report #2

The author made significant revisions to this manuscript version, which enhanced and clarified nearly all of my concerns. Therefore, I recommend approving the manuscript with only minor comments.

Response: Thank you very much for your careful review and constructive comments. We revised this manuscript substantially and provided the point-by-point responses to all the comments and suggestions of reviewers accordingly. All the revisions were highlighted using track changes and blue words in the manuscript.

Minor comments (line numbers are from the track changes version):

Line 118. Hard transition. Incorporate some like "As summary per basin, there are 53 events…."

Response: It was revised accordingly (see Line 117 in the manuscript with track changes).

Line 129-130. I do not think you need to add the reference to something that is in the supplementary information. This reference should be in the supplementary information.

Response: This reference was deleted accordingly (see Lines 126-128 in the manuscript with track changes).

Line 137. Does it mean that catchments larger than 200 km use only the information

around the centroid?

Response: The selected catchment area ranged from 21 km^2 to 4830 km^2, which were much smaller than the area of buffer zone, i.e., $3.14\times100^2=3.14\times10^4$ km^2. Therefore, many stations out of the catchments were also selected for the meteorological interpolation (see Figure 1).

Line 213. You have the definition of aridity here. SPEI is different. However, Table 2 mentions SPEI, so at this moment, I do not know which one you are using. You have to be consistent.

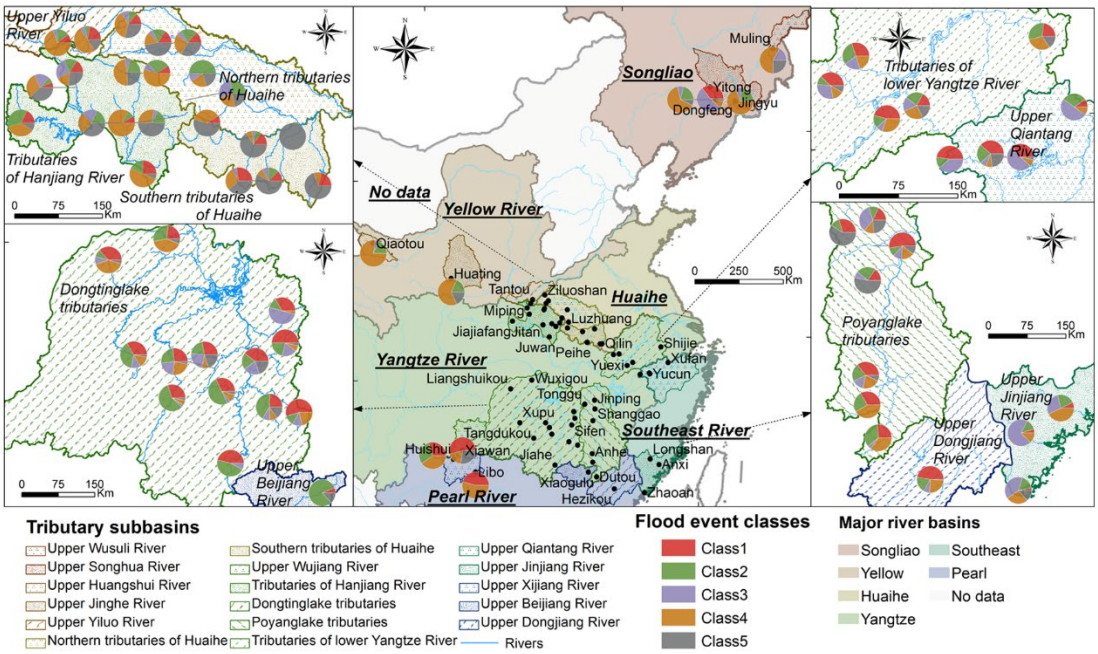
Response: We were very sorry about the inconsistency. In our study, we used the aridity index (ADI). The SPEI and drought index in the whole manuscript were replaced by ADI and aridity index, respectively (see Lines 22, 191,195, 357, 358, 366, 387, 397-399, 408-411, 414, 417, 418, 432, 434, 437, 447, 511, 513, 514, 534, 575, and Table 2, Figures 6-8 in the manuscript with track changes, and Figures S2-S6 in the Supplement).

Line 223-223. You do not need to mention the functions and tools you used.

Response: We removed the functions and tools in the manuscript (see Lines 201 and 202 in the manuscript with track changes).

Figure 4. The idea of my previous comment was to simplify the figure and focus on the important message: "spatial variability". However, the authors added additional information about the subbasin. I would try to minimize the use of solid colors for the pie chart (you just need the contour of the polygon). Delete the name of each station. Use a 2D pie chart (maybe make them bigger). If you consider the information of the subbasin relevant, you could add the name to the figure.

Response: The tributary subbasins added in the figure would be useful to present the spatial distributions of flood events among different subbasins. The figure was revised following your suggestions (see Figure 4 in the manuscript with track changes).



Line 459. Grammar: "The significant factor number in the catchment attribute category is low, despite that the more relevant are the mean catchment length (Length), river density (Rivden), and the ratio of river width to depth (RivSlope)."

Response: It was revised accordingly (see Lines 388-390 in the manuscript with track changes).