

Interactive comment on “Aspects of seasonality and flood generating circulation patterns in a mountainous catchment in south-eastern Germany” by T. Petrow et al.

T. Petrow et al.

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We would like to thank you for your helpful suggestions and criticism how to improve the manuscript. Please find our response and how we tackled the criticism to all suggestions below. Your remarks are marked with "-", our response can be found directly below the remark.

Specific comments

- The general impression is that most attention is paid to the methods of “statistical purification”, whereas the conclusions on real relationships between weather events and floods are too short and not detailed enough. If the main conclusions are made based on quite simple analysis of the frequencies of floods under certain circulation

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patterns, may be the previous detailed statistical analysis can be presented shorter?

We revised the structure of the paper and provided more information on the landscape analysis (new Section 4.4 Results - Landscape characteristics). We think that we received with this a more balanced structure of the components of the article.

- The authors reveal the so-called Vb-regime as rather important one. However, the Vb-Regime is absent from the list of circulation patterns (Table 2). Only from the caption to the last figure one can see that the Vb-regime can correspond to 2 different GWLs (TM and TRM). No analysis of the merging these 2 types into a new type (Vb) is presented. It is also unclear whether all TM and TRM types always correspond to the Vb-regime.

We added information about the Vb-weather regime in many different parts in the article. Please see the above answers regarding the Vb-weather system. In the literature (e.g. DKKV, 2003, Gerstengarbe & Werner, 2005 or Kästner 1997) this weather system is described to include these two circulation patterns. That's why we didn't integrate an analysis or description in the article. All TM and TRM types correspond to the Vb-regime.

- For studies of the winter floods, may be a combination of 2 (or more) circulation patterns should be analyzed: one with heavy snowfalls, and another with intense snowmelt.

Unfortunately, we don't have data, which provide detailed enough information about snowfall.

- Is it necessary to use the German term "Großwetterlage"? It could lead to misunderstanding for non-German readers.

We found some literature in English (especially from the PIK, which published this classification based on the German Weather Service), which also used the term. However, we decided to change it into "circulation pattern".

Technical corrections

- In the abstract, it would be nice to explain in short what is the Vb-Regime.

We included short information about the Vb-Weather regime into the abstract.

- Page 3: “only five different weather patterns are susceptible to produce flood events in Bavaria” - five of how many?

The authors used the same classification as we had. Therefore, they found five out of thirty different weather patterns. We included this information into the paper.

- Page 5: “The region has a vital history of large flood events.” May be a long history?

We changed the word.

- Page 6: “have a distance of at least 3 km among each other.” It should rather be “between each other”.

We changed the word.

- Page 7: Why the mean flood discharge is abbreviated as MHQ?

We changed the abbreviation into MAF.

- “Vb-weather regimes do not always trigger large flood events in the study area, but large floods are mostly generated by these weather patterns” - it would be nice to see the numbers.

This paragraph was removed.

- Figure 2, legend: not “brushes”, but “bushes”.

The old Figure 2 showing the land-use in the catchment was removed from the article as suggested by Reviewer 1.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 4, 589, 2007.

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