The authors would like to thank the referee for her positive, constructive and useful comments. Please find here a point by point response to the comments. Hereafter, the referee's comments are in red and our responses in black.

HESS review aspects

1. Does the paper address relevant scientific questions within the scope of HESS?
Yes. The importance of antecedent moisture for flood triggering remains an important question.
2. Does the paper present novel concepts, ideas, tools, or data?
Yes. The innovative part is in the use of a large dataset to extract statisitically significant information on flood generation.
3. Are substantial conclusions reached?
Yes.
4. Are the scientific methods and assumptions valid and clearly outlined?
Yes.
5. Are the results sufficient to support the interpretations and conclusions?
Yes.
6. Is the description of experiments and calculations sufficiently complete and precise to allow their reproduction by fellow scientists (traceability of results)?
Yes.
7. Do the authors give proper credit to related work and clearly indicate their own new/original contribution?
Yes.
8. Does the title clearly reflect the contents of the paper?
Yes, it's a fitting title.
9. Does the abstract provide a concise and complete summary?
Yes, although it is rather long for an abstract.
10. Is the overall presentation well structured and clear?
Yes. Maybe you could move the part "Ideally, a flood-by-flood analysis ... Swiss rivers" (57-9–17) to the Methods-section?
Yes, also for us it makes sense to displace the motivation for the strict definition of PAPs to the method section. We propose to move the lines 3257-5—17 to the top of section 3.3

11. Is the language fluent and precise?
Yes. I found it very well-written.
12. Are mathematical formulae, symbols, abbreviations, and units correctly defined and used?
Yes. The abbreviations (e.g. HQ20, D2-3) were well explained, but I sometimes got a little confused when there were too many in one sentence. For example, you could use some more words to make sentences such as "...the P > 99 of D4-14 is as frequently observed as P < 50." (61-25) a little more readable.
The abbreviations were created with the goal of simplifying the language and, to our opinion, they in fact help to shorten and simplify the text in general. However, we understand that some parts of the results section may appear rather heavy dur to the numerous abbreviations. We propose to revise sections 4.2 and 4.3 and replace some unnecessary abbreviations with complete words. For e.g. "A return period < 10 days" would be replaced by "A return period shorter than 10 days". The sentence mentioned by the referee would be changed into: "during D4-14, precipitation accumulations higher than P99 were as frequently observed as accumulations lower than P50."

Should the p/(1p) on 56-13 and 56-15 be p/(1 − p)?
Yes, it should be p/(1 – p). Thank you for mentioning this issue. This error does not occur in the PDF that we uploaded. We will have to check the revised version carefully.

13. Should any parts of the paper (text, formulae, figures, tables) be clarified, reduced, combined, or eliminated?
No.
14. Are the number and quality of references appropriate?
Yes.
15. Is the amount and quality of supplementary material appropriate?
Yes.

Specific comments

52-10: "The area must be ... covered >90% by the precipitation dataset." Do you mean in space or time?
Thank you for pointing to a possible source of confusion. Here "space" is meant. Confusion will be avoided in the revised version by a reworded sentence: "The catchment must be larger than 10 km2 and at least 90% of its area must be covered by the precipitation dataset."

53-16: Are Nival catchments snow-dominated?
Yes, they are, we will clarify that by adding at 3253-25: “The mean annual cycle of the runoff in Pluvial, Nival, and Glacial catchments is mainly dominated by, rain water, snow melt, and glacier melt, respectively”

53-18: What is the origin of the name Meridional?
This term is inherited from the hydrological regimes of Switzerland defined by Aschwanden and Weingartner (1985). In Switzerland and France, this term refers to the southern part of the country. Aschwanden and Weingartner (1985) thus named the catchments Meridional to emphasize their location south of the Alps.
The sentence at 3253-17:
“Then, all catchments from the southern side of the Alps were joined in the Meridional group.”
Will be replaced by:
“Then, all catchments from the southern side of the Alps were joined in a separate group.”
and we add at 3253-21: “Aschwanden and Weingartner (1985) called this group “Meridional” to emphasize its southern location.

57-23, 58-14, 60-4, table 2: I found the word “intense” a little confusing because I associate that word with a high precipitation intensity, and not high sums.
This comment makes sense. Thank you for pointing that out. We propose to use (consistently through the whole manuscript) the word “intense” only when referring to intensity and replace “intense” by “high” when referring to precipitation totals like in table 2, section 4.1 and section 4.2. In caption of table 2, we would replace precipitation “intensities” by precipitation “quantities”

63-22: Because of the words “seems counterintuitive” I was expecting that you would explain why it was in fact logical.
The explanation (a hypothesis) for the “counterintuitive” observation is actually discussed in 3263-27 to 3264-9. We will add sentence at 3264-9 to state more clearly why floods at Glacial catchments are less frequent after wet periods:
“Hence, floods are less frequent after precipitation at Glacial catchments, probably because of the reduced glacier melt.”

69-4: “would require to use land surafec models”. Another possibility could of course be using data, such as in situ soil moisture or groundwater observations or remotely sensed soil moisture.
Yes, this is true. We will now write:
...would require to use land surface models and/or extensive observations of soil moisture and ground water. This is beyond the scope of our study...

70-25: You give recommendations for researchers. Can you also formulate receommendations for practical application?
Our study may especially be interesting for flood warning systems. We will add at 3271-3:
“The results presented here may also motivate particular efforts to implement antecedent precipitation information into flood warning systems for the Jura Mountains, the eastern and western Swiss Plateau, and the lake outlets areas.”

Fig. 6: The grey areas in panels b and d are outside the cloud of lines. Is that possible?
Or did you accidentally use the grey areas belonging to the a and b panels?
Yes it is possible since the gray zone is here determined by binomial probabilities and thus independently of the sample itself. Only the sample size has an influence on the gray zones extent. In fact, we were hesitating to add more information on how the gray zones are calculated. In the revised version, we would add the following information to the gray zones at 61-10:
“The gray zones are based on binomial distributions and represent the 99% level of significance of the variations of relative frequency in case of independent events. In the case investigated, the independence of events cannot be assessed in a purely quantitative way but flood events are likely dependent (there are more simultaneous flood occurrences than expected from a random process) because floods in neighboring catchments can react similarly to the same weather event. The significance shown is hence likely too high (the zones too small) but the gray zones are still drawn as indicators of the minimum amount of random noise that can be expected. Note that it is strongly dependent on the sample size, i.e. on the number of flood events.”

Technical corrections
46-5: amount → number
46-26: exit → outlet
48-7 non extraordinary → non-extraordinary
48-8 lead → led
51-2: in regard → with regard
51-2: amount → number
53-4, 53-5, 53-6 and many other locations: I think it’s better to rename Lakes Exits to Lake Outlets (in any case, I think the s behind Lakes should be removed).

54-13: underground → subsurface?
55-1 a ± 45 days range for each day of the calendar year → a 3-month moving window
47-8: conducive → conductive?
62-6: Marco → Macro
23-11: nb. 111 → no. 111
66-8, 22-13, 66-14, 66-24, 66-27, 67-6, 67-8, 67-10: HQ20 s, HQ5 s → HQ20s, HQ5s
69-9: time and space distribution → temporal and spatial distribution
70-17: 2 day → 2-day
71-5: don't start a new paragraph after one sentence.
Fig. 3: y-labels are missing.
Fg. 3, caption: Absolute values of... → Precipitation sums belonging to... Maybe also add something like "Variation between catchments is visualized in boxlpots".
All figures: I don't know how large the figures will be in the final HESS-paper, but make sure the font sizes of the labels and axes are large enough

All technical corrections make definitely sense to us and they will be implemented in the revised version, except that we wish to keep the word "conducive" at 47-8. For us, the word "conducive" fits better the sentence than "conductive".