

Interactive comment on “Influence of multidecadal hydroclimate variations on hydrological extremes: the case of the Seine basin” by Rémy Bonnet et al.

Anonymous Referee #2

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This paper details research conducted on the link between multidecadal hydroclimate variations and streamflow in the Seine basin in France. Unfortunately, I have found it difficult to determine the scientific contribution of this paper due to its flaws in language, layout and lack of detail in the methods. I am recommending that this paper be significantly revised, in order that we may better understand the outcomes of this research. The major points that I recommend are:

1. The paper’s motivation needs to be better set out. The abstract states that precipitation and groundwater modulate river flows, and that extreme events are influenced by hydroclimate variations. This is not news to the hydrological community. What is novel here? Why is this interesting, and to who, and why?

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2. You are missing significant volumes of literature surrounding connections between atmospheric circulation patterns and streamflow across wider Europe. e.g. (among many others)
 - Folland, C. K., Hannaford, J., Bloomfield, J. P., Kendon, M., Svensson, C., Marchant, B. P., Prior, J., and Wallace, E.: Multi-annual droughts in the English Lowlands: a review of their characteristics and climate drivers in the winter half-year, Hydrol. Earth Syst. Sci., 19, 2353-2375, <https://doi.org/10.5194/hess-19-2353-2015>, 2015.
 - Eva Steirou, Lars Gerlitz, Heiko Apel, Bruno Merz, Links between large-scale circulation patterns and streamflow in Central Europe: A review <https://doi.org/10.1016/j.jhydrol.2017.04.003>
3. You need to explain your method much more clearly. Can you summarize the method in Bonet et al (2017) as it is mentioned over and over, and is seemingly critical to the understanding of your method here.
4. The paper's language be reviewed by a confident English speaker. The sentence structures are often incorrect, and the tenses are jumbled, which has made the paper very difficult to read. The English appears to improve later in the paper, so I think a little more effort is required.
5. The papers structure and headings need to be amended, especially in the methods section.
6. Most of your figures have no legends, and many do not have appropriately descriptive axis labels. Please correct this to aid interpretation
7. Nearly all of your figures rely on red/green differentiation. 1 in 10 of the male readers will not be able to see this due to common colour-blindness. Please amend your color schemes to avoid this issue.

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I have felt unable to go into the detail of the research for these reasons, and would be happy to re-review the paper once these issues have been addressed.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2019-320>, 2019.

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