

Dear Editor,

First and foremost, I would like to thank you very much for the time and consideration you put into correcting the methodological flaws that you and the reviewers found in the paper.

My understanding of the extreme value selection process was lacking and probably not adapted to the problem at hand. I will try to explain here what was done to address your earlier comments, although the paper itself should be clear.

First, we decided to use the peak-over-threshold approach to select extreme values that could be fitted with good accuracy. This approach implies that the distribution is bounded by the thresholds, which is usually not a problem since events associated with return periods of more than one year are associated with values above the threshold.

However, the procedure we use to calculate the return period of an event leading to erosion implies that we integrate the copula along the contour line of the associated event on the copula. What would often happen is that the contour line would not be fully present on the copula, leading to an underestimation of the return period.

We therefore decided that using the block maxima approach would be more appropriate, as it is not as strictly bounded.

The implementation has been corrected thanks to your comments. We were previously using the `find_peaks` method from the `scipy` package, which, as you pointed out, had a "distance" parameter that did not correspond to the block maxima approach. We switched to the `pyextreme` package, which has the block maxima approach already implemented, and defined a block size of 1 year.

This changed the resulting distribution significantly and has implications for the rest of the article. The figures have been changed accordingly, as have the interpretations of the results.

I hope you find this correction process satisfactory.

Yours sincerely,

Clément Houdard