Which strategy to improve the performances of an LSTM-based model for extreme stream temperature values?

by

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Response to the Editor and Reviewers, round 3

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1 Summary of main changes

We first would like to thank the Editor for their feedback on the second round of revisions. The Editor proposed some technical corrections regarding Figure 1 of the manuscript, which we accounted for as detailed in Section 2 of the present response.

2 Detailed response to the Editor

Editor's comment: *"thank you for addressing the second round of reviews in a thorough and direct manner. I am very happy with how the manuscript shaped. I would like to get a "technical correction" before publishing. Due to a, indeed technical, coincidence, I realized that Figure 1 can be difficult to read on different monitor settings. Hence, I ask you to adapt the figure to make it easier readable to account for the different reading behaviors/settings of HESS readers. For example: Given the test-stations a different marker (say, a circle) and reduce the opacity of the background map; and remove the river lines outside of the catchments. It is also the first figure that potential readers will see, so I believe it is worth to put in a bit more time into its presentation."*

Authors' response: We thank the Editor for his nice feedback! Following the Editor's suggestions, we updated Figure 1 by applying the following modifications:

- We changed the markers of the non-test stations from green triangles to white triangles, and changed the markers of the test stations from magenta triangles to magenta rectangles.
- We changed the color palette to reduce the opacity of the background map; the green color representing low elevations is now lighter.
- We removed the river lines outside of the catchment polygons.

The new Figure 1 of the revised manuscript is reproduced in Figure R1 of the present response.

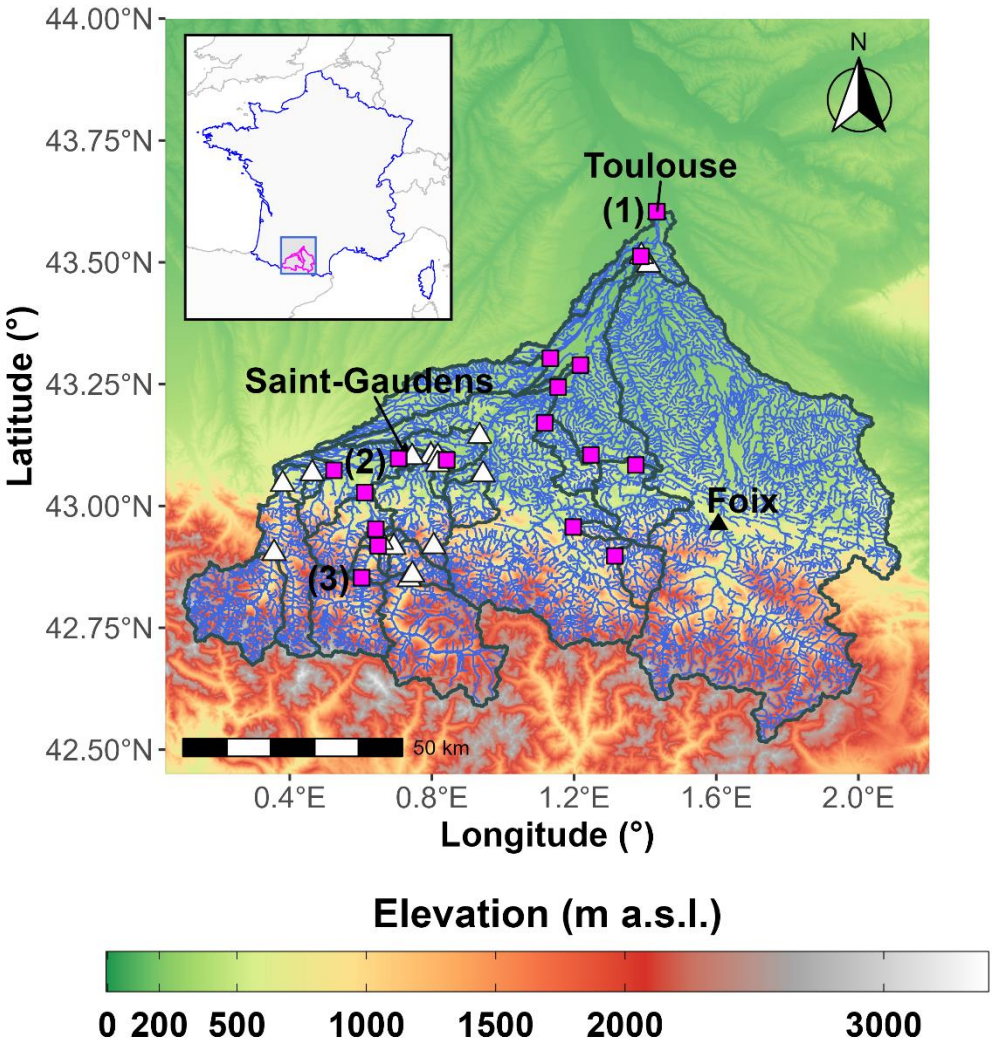

Figure R1: Location of the Garonne catchment and the 37 stream temperature stations used in this study. Test stations (i.e., stations having at least 2434 daily observations of stream temperature) are shown with magenta rectangles, whereas stations used only for the training of regional models are shown with white triangles. Elevation values were extracted from the SRTM GL3 product (90-m resolution). River network was extracted from BD CarTHAgE®. Numbers (1), (2), and (3) indicate the location of the river reaches with a pair of stations close to each other but with stream temperature data collected from two different sources.