

Review of Faghii et al

General comments

Faghii and coauthors investigate the impact of bias-correcting climate models at the sub-daily time scale on streamflow predictions. They find small, but consistent improvement, especially for small catchments. I find the manuscript logically organized and well written although I think several errors are made in English, but I will not go in detail as I am not a native speaker myself either and professional correction seems more appropriate. The goals of the study are clear and so are the conclusions. I have no major comments on the content, but do have some comments on the presentation material and the way this research is embedded in the scientific literature. Overall, I think this manuscript can be accepted subject to minor revisions after the following issues are addressed:

- Self-citations and citing other work. I noted that the manuscript contains 15 self-citations of the second author François Brissette. I strongly wonder whether such a high number of self-citations is truly justified and whether it cannot be reduced. Moreover, other seemingly relevant works are overlooked. For example, but not limited to: Bárdossy and Pegram (2011), Li et al. (2016).
- Figures. The figures and their captions need improvement. Labels 'a', 'b', etc. are missing; often unclear whether 1 particular year is considered or an average over 24 years; x-axis time in hours has no reference to what is 0, whether this is local time or UTC, mismatches with the text that discusses AM and PM, and over a year and indication of months would still be more logical; for sample watersheds it is sometimes specified which ones they are and sometimes it simply isn't making reproduction impossible; legends often refer to multiple panels, thus placing them outside a panel makes more sense; some figures present 'envelopes' without defining what exactly these envelopes mean in the caption.
- Code and data availability. The code and data availability statement does not contain any information about the availability of the actual code that was generated to produce the results in this paper.

Specific comments

L22-23: "Results show small but systematic improvements of streamflow simulations when bias-correcting the diurnal cycle of precipitation and temperature."

Please quantify in a summarized way.

L238: "(variability around the ensemble mean expressed in %)"

since no quantification is actually given, it seems completely irrelevant to note that it can be expressed as a percentage, whereas the statement would remain valid if expressed as a fraction.

L385-386: "It is also well-known that the NSE criterion that was chosen for the hydrological model calibration is more sensitive to high-flows."

Provide a reference for this statement.

L390-391: "A single climate model was used and our results should be replicated with other climate models."

Why? Is there any reason to expect a different result?

L396: “However the MBCn (Cannon, 2018) is arguably the best quantile mapping method available. Repetition, please delete.

L447: “correcting the diurnal cycle results in better streamflow simulation,”
Please explain ‘better’ and quantify in a summarized way.

Technical corrections

L25: “of summer streamflow on small catchments”
on --> in

L139: “MBCn was chosen ...”
No need to start a new paragraph

L162 and L165. The brackets for these references are not correctly placed.

L169: “PET”
Please use the more scientific notation of single symbols, thus E_p instead. See:
<https://iahs.info/Publications-News/Other-publications/Guidelines-for-the-use-of-units-symbols-and-equations-in-hydrology.do>

L240: “very efficient”
Delete very

L331. Do not write single sentence paragraphs

References

Bárdossy, A. and Pegram, G.: Downscaling precipitation using regional climate models and circulation patterns toward hydrology, *Water Resour. Res.*, 47(4), 1–18, doi:10.1029/2010WR009689, 2011.

Li, J., Johnson, F., Evans, J. and Sharma, A.: A comparison of methods to estimate future sub-daily design rainfall, *Adv. Water Resour.*, 110, 215–227, doi:https://doi.org/10.1016/j.advwatres.2017.10.020, 2017.