

The authors investigated how the “hot model problem” is critical for the future changes in mean, high and low flows in the North America. I have some minor comments.

We appreciate the time you've taken to read our paper and offer valuable suggestions for enhancement. You will find below a point by point answer to your comments.

L20-23: At the same time, inclusions of hot models lead to critical risks of significant overestimations of climate change impact in some areas.

This is absolutely accurate. The current abstract might seem to place undue emphasis on results concerning catchments with minimal impact. We will ensure that the revised abstract more effectively highlights the potential for overestimating these impacts.

Please add references of ESMs in the table 1. Did you compute ECSs by yourself?

Good point. We will add the references Within Table 1 in the revised version. The ECSs values are normally computed by the various climate modeling centers using a set of controlled runs. Most of the ECS values were taken from the Hausfather et al. (2022) paper. A few others were taken from other sources, typically papers originating from the modelling centers. We will add this information in Table 1 in the revised version of the paper.

Line 56: Shiogama et al. (2022, Nature) constrained future annual precipitation changes. Please see their Fig. 3b. Hot models overestimate annual mean precipitation increases in Alaska, Canada and the West US where your spread of flow changes significantly decline by removing the hot models.

Shiogama, H., Watanabe, M., Kim, H. Emergent constraints on future precipitation changes. Nature 602, 612–616 (2022). <https://doi.org/10.1038/s41586-021-04310-8>

Line 61: Shiogama et al. (2022, ERL) showed that hot models could cause overestimations of aggregated economic impact of future climate changes.

Shiogama, H., et al. (2022) Uncertainty constraints on economic impact assessments of climate change simulated by an impact emulator. Environ. Res. Lett. 17 124028

<https://iopscience.iop.org/article/10.1088/1748-9326/aca68d/meta>

Thanks for the references. They are very relevant to our paper as they support and explain some of our findings. We will incorporate the references in both the discussion parts of the revised paper.

L183: How did you define outliers?

The outliers are defined using the default settings in the Matlab *boxplot.m* function. Under this default setting, outliers are defined as having a value larger (smaller) than 1.5 times the interquartile range (Q75-Q25). Using this definition, for normally distributed values, 0.7% of values would be considered

outliers. Rather than adding this to the revised version, we propose to use a different version of boxplots where the whiskers correspond to the 5<sup>th</sup> and 95<sup>th</sup> quantiles, and values below or above would simply be shown and not called outliers.

L322: High ECS of NESM3 does not necessarily mean greater regional warming (Fig. 3).

Correct. We will emphasize this in the revised version.

Because the total spread ratio analysis would be not sensitive to the removal of the second largest model, it may be better to show standard deviation ratios in Figs. 12 and 13.

Correct. We will either substitute the metric or show both Figures if the content information warrants it.