

Response to Anonymous Referee #2

Original comment in black, *response in blue and italics*

We sincerely thank the two reviewers for their time and effort spent in helping us improve the quality of the manuscript. The main changes that have been made according to Anonymous Referee #2 's feedback include the following, and the specific comments are addressed below.

- *We included a list of all abbreviations in the appendix to better support the reader*
- *We extended the introduction of the MBCn method and added more information on the application of the method*

Please note that all information on pages and lines refers to the track changes version of the revised manuscript.

This study applied a MBCn to improve the model result by reducing the bias compared to Univariate. The results showed how the FSE and HDCEs trend changed under the high impact scenario. Overall, the paper is clear and well presented. However, there is still some minor issues need to be addressed. *Thank you for the positive feedback.*

Line 270, I recommend heatwave events abbreviation could be used as HWE or HE, not HW. *We changed the abbreviation to HWE throughout the manuscript.*

Since the manuscript has so many abbreviations, it is better to create table or separate page as appendix to list them together to be easier to follow. Also, please define each acronym at the very beginning. *We included a list of all abbreviations in the appendix. The calculations of the abbreviated variables are presented in Table 2. Additionally, we revised the manuscript to ensure all abbreviations are explained in the text when they first appear.*

The MBCn method section needs more details, since it is important for readers to understand how method is applied. *We extended section 3.2.2 Multivariate bias correction to include more information on the application of MBCn and additional possibilities within this framework presented by Cannon 2016.*

Literature

Cannon (2016): Multivariate Bias Correction of Climate Model Output: Matching Marginal Distributions and Intervariable Dependence Structure. Journal of Climate 29 (19). <https://doi.org/10.1175/JCLI-D-15-0679.1>