

Interactive comment on “Projected intensification of sub-daily and daily rainfall extremes in convection-permitting climate model simulations over North America: Implications for future Intensity–Duration–Frequency curves” by Alex J. Cannon and Silvia Innocenti

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Below we present replies (Reply) to the reviewer comments (Comment) below.

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Comment: Overall, I found the manuscript to be reasonably well polished with minor editorial and presentation issues (see below). If there are any thing "major" to comment

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on: The paper, at times, strikes me to be on the technical side which may irk broader audiences (i.e. stakeholder, data users, climate modellers with less background in extreme value theory). That said, I appreciate the paper's conciseness. While detail discussion is technical, the conclusions is very accessible to the general audience. Overall, I think the paper is acceptable with some minor presentation changes

Reply: The reviewer's point about striking a balance between technical detail and accessibility, while still being concise, is well taken. The original goal was to try to write a paper that could be read and found useful by multiple audiences – end users, statistical climatologists, climate modelers/climate scientists – without compromising too much in any particular aspect. The edits and suggestions made below should help with accessibility and clarity. Where possible, edits to the final draft will keep this overall comment in mind as well.

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Comment: Abstract lines 13-15: What are the physical meanings of changes to GEVSS parameters? That information may be too technical for an abstract.

Reply: The abstract in the revised manuscript will be modified to better link information on projected changes in the GEVSS parameters to the physical changes in rainfall intensity that each implies.

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Comment: Table 1: A horizontal separator for each dataset item may make the Table somewhat easier to follow.

Reply: Horizontal separators will be added to the revised manuscript.

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Comment: Pg 12 Lines 8: "from the 488 IDF curve TBRG stations shown in Figure 1."
<- This may require rephrasing. Perhaps something like "... from the 488 IDF curves

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derived from TBRG stations; the station locations are shown in Figure 1”.

Reply: Agreed. The suggested text will be added to the revised manuscript.

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Comment: Figure 7 captions/Pg 16 line 15: "Results are compared with the IDF curves disseminated by ECCC" should be mentioned in the caption as well for the sake of clarity.

Reply: Agreed. This will be added to the Figure caption.

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Comment: Page 16 Lines 30-31 to Page 17 lines ~10: This is an example why overly technical discussion may bury important end user result. It will help the general reader if “For example, if the goal is to assess whether there is evidence for a steepening of IDF curve in the future” to stand out from the rest of the discussion. Perhaps a paragraph break will help here?

Reply: A paragraph break here would help and will be added to the revised manuscript.

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2018-290>, 2018.

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