

General comments

Rainfall intensity, duration and frequency (IDF) curves are one of the commonly used tools in engineering and infrastructure design. More intense rainfall events with shorter durations are of more interest because of the more severe damages usually associated with them. However, coarse resolution global climate models (GCMs) are incapable to simulate these rare (with longer return period) events which usually occurs at small/local scales. High resolution regional climate models (RCMs) has been helpful on this regards, higher resolution convection-permitting climate modelling is the trend to better account for the impacts from local geophysical features on intense short duration storms. This paper tried to understand some of the potential impacts on projected IDF curves from convection-permitting climate simulations over the North America. Conclusions from this study would contribute to improvement of future projected IDF curves, although a lot of further research is still needed, as the authors pointed out.

The paper was well-written with logic reasoning in the text, limitations/disclaimers clearly stated, and potential further research identified in the conclusions. Understanding the data availability issues, I would really like to see projected IDF curves based on convection-permitting model results driven by the GCM results under the IPCC RCPs (opposed to the PGW scenario in this study) using this GEVSS method in future studies.

I would suggest this paper be published with the following minor technical corrections.

I minor typo correction:

Line 25 on page 23: add “is” between “it” and “difficult”.

I question:

The authors mentioned the difference between their GEVSS and conventional (e.g. ECCC) methodology for IDF curves, are the IDF curves from this study ready for engineers to use for their infrastructure designing and planning? Do the authors see any challenges to persuade engineers to use their new IDF curves from this study, instead of those based on conventional method, which have been used for ages, if not longer?