

Firstly, I want to thank the authors of the paper for their detailed and robust responses. I am very happy the authors paid a lot of attention to provide persuasive answers to all four research questions in my original review. Particular attention is given to respond to question (2), which was substantiated with an additional piece of analysis (regarding the uncertainty calculation) that I think will make a good addition to the paper.

Summaries of two (out of the four) main questions discussed in the review are listed below, along with the author's answers (in blue text), followed with my final comment/view in **bold text**.

1. Review point: The proposed approach to produce a probabilistic event set by perturbing/expanding the WISC historical events is technically correct and appropriate given the scope of the analysis. Having said that, although acceptable, the approach is not novel. (...) the main catastrophe model vendors in the market (RMS, AIR, AON Impact forecasting and more) tend to provide probabilistic windstorm solutions based on outputs extracted from a variety of long global climate model (GCM) runs, calibrated (often fitted) against the available historical record. The advantage of this approach is that the simulation generates physically realistic storms that are not constrained by the attributes/parameters of the seeding historical windstorms.

Author's response: As the referee rightly states, there are many different ways to assess the risks from European winter windstorms. We show two possible approaches in this paper (...) The paper was not necessarily about showing a new methodology. In our view, the recent development of freely accessible data on windstorm footprints (WISC) in combination with an open source damage model (CLIMADA) opens up new opportunities for applied research and provides a straightforward entry point for insurance companies to model the risks associated with winter windstorms in Europe – thus providing an additional / alternative perspective compared to inhouse or commercial models (as listed by the referee above). The application example we give is something new because of the open source concept presented.

Reviewer's response: I understand and agree with the paper aim. You are not looking for a novel modelling methodology, instead, you provide an application example of how to extend the information available in the available WISC data and build an inhouse model. I think there is merit in your approach.

2. The approach to expand the WISC historical events and determine the frequencies of the offspring probabilistic storms (GEV distribution fitted to the historical SSI values) has merit, and the concluding results in paragraphs 3.2 and 3.3, also provided in table 2, are realistic. (...) I understand why the authors prefer to retain the confidence interval based on the WISC historical set (CHF 19M to 33,000M), yet this reduces somewhat the functionality of the probabilistic expansion model. It's main objective is to provide a tail view. Here are a few suggestions: (a) Sample randomly the equivalent of 250 or 500 years of storms and build multiple exceedance frequency curves for each sample. (b) Estimate multiple probabilistic extensions of the WISC historic event set with different initial assumptions ... (c) combination of the above two ideas.

Author's response: We thank the referee for his suggestions. We have implemented all of them and discuss the results in the following. As a conclusion, we would still argue, that the yellow ribbon in Fig. 2 (i.e., the sampling uncertainty of the modelled damages based on "WISC 168 historic") is the best illustration of the uncertainty for "WISC probabilistic

extension". We will include this argumentation in the manuscript, alongside the arguments already provided in this response. (...)

We are aware that the parameter uncertainty regarding the event set "WISC probabilistic extension" is important, especially in comparison with "WISC historic". However, in our opinion this source of uncertainty is not fully estimated and sufficiently illustrated with 184 such a resampling methodology. (...)

We resampled (choice with replacement) the historic events (...) Then we created a probabilistic event set for each of these samples. The 90-% confidence interval is again given by the 5th and 95th percentiles of all samples. This is the best possible way we achieved to illustrate at least part of the uncertainty that originates from the fact that the best-estimate of the distribution of the pan-European Storm Severity Index is unknown and thusly the parameters for the creation of the probabilistic sets can only be chosen with a certain degree of uncertainty. The uncertainty estimation up until a 30-year return period follows approximately the uncertainty estimation for "WISC historic"; at higher return periods the uncertainty estimation is levelling off, probably due to the limited ability of our probabilistic approach to create very different (e.g., much stronger) events from the seeding historic set. Therefore, we argue that the shown difference between the yellow ribbon and the red ribbon could be misleading. (...)

The results for the referee's suggestion 2c, which is a combination of his suggestions 2a and 2b, are given in Fig. R1-3. (...) Whereas this combination provides a smooth illustration of the resampling uncertainty, it still suffers from the same problem as the illustration in Fig. R1-2. **Therefore, we would still argue that the yellow ribbon in Fig. 2 is the best illustration of the uncertainty for "WISC probabilistic extension".**

Reviewer's response: Thanks for the extensive work that resulted in the uncertainty estimations given by the red ribbons in Fig R1-1 to 3. I think that this analysis illustrates very clearly three different levels of uncertainty estimations, blue, yellow and red ribbons. I should clarify that I do agree with your conclusion, the yellow ribbon gives the best account of the uncertainties associated with the "WISC probabilistic extension" and it should be included in the paper. This does not change my view though that the 'reduced' uncertainty in the red ribbon from the resampling approach also has merit and it should be included in the paper as well, not to replace the (yellow ribbon) full WISC probabilistic extension uncertainty, but to complement it. Yes, the uncertainty estimation from resampling is 'incomplete' yet it can be helpful in the practical case of model. The Uncertainty in the yellow ribbon is too broad to provide a comparison criterion between two different exceedance frequency curves from different models, (e.g. WISC hazard + GVZ versus WISC hazard + CLIMADA) Thus, I think inclusion of the resampling uncertainty (red ribbon) in addition to the full WISC probabilistic extension uncertainty) yellow ribbon can be advantageous for your paper.

The remaining two discussion topics in the review (the role of the loss uncertainty due to the vulnerability and the different input exposures) has also been addressed thoroughly and I consider them clarified.