Review of *'Using high-resolution global climate models from the PRIMAVERA project to create a European winter windstorm event set'* by Lockwood et al.

Overview

This paper presents a windstorm footprint event set based on PRIMAVERA model simulations of the historical climate. This paper is very well written and the data described in this manuscript will be of great use both academically and for use in industrial sectors.

The authors present their footprint construction and calibration methods and also perform analysis as to how the NAO phase affects windstorm losses. Overall, I have only a few minor comments which should be addressed subject to acceptance and publication.

Comments

L112 – You have chosen to use the atmosphere-only simulations of the PRIMAVERA models. What is the justification of using these instead of fully coupled simulations?

L124-125 – For the models that output gust data, how does your final diagnostic compare to the model output gusts? Are they at all similar?

L289 – Why this threshold? Is it a particular threshold from the reanalysis LI or has it been arbitrarily chosen by the authors?

L298 and Fig. 4 – How does the track density of the severe storms compare to that of all the storms? As the severe storms are what you are interested in would this be more appropriate? Are the biases of the same magnitude and in the same locations?

Fig. 4 – are these biases significant?

L304-305 and Fig. 5 – this sentence needs re-phrasing/clarifying. In the caption it is clear you are showing footprints of similar structure (as far as I can tell). However the sentence states that you are showing those of similar LI, which is not the case. On this note i think it would also be very useful to have a comparison of similar LI storms as Daria, Kyrill, Anatol,etc.

L305 – How did you select these storms? Was this just done by eye or was there a quantitative measure to select them?

Table 2 and onwards – How does the inclusion of the MM HadGEM3 run affect the model bias? Does this overweight the means toward the HadGEM3 climate. Please quantify the impact of having both the HM and MM simulations compared to just having HM.

L345-347 – these storms that are discussed in Sect. 5 it would be good to show all the evidence behind removing these from the data. LI footprints could be included in the appendix.

L352-354 – This statement assumes that the distribution of LI is the same in the reanalysis as the models, which it may not be - it may also be good to do the GPD fit to the reanalysis data in Fig. 7b to compare to the fit of the reanalysis and models.

L387-391 – This dispersion value is this for cyclone counts in your entire European region? In Mailier et al. (2006) this is shown as a spatial field. Do your results compare spatially to this?

Fig. 9 – are figs 9a and 9b consistent for other geographic regions as is the case in Fig. 9b?

What is the impact of the 5 different models in your analysis? Do they all exhibit different behaviour? Are the results shown for example in Figs. 6, 8, 9 an artefact of the model mean or is this evident as a feature of each of the individual models?

You state the data is available from the author, however, I think this dataset would be very beneficial for general access. Are there plans to make this publicly available?

Some of the references quoted in the text are not included in the reference list – please double check the reference list.