

Referee 1

General comments

This manuscript is devoted to the analysis of the recent mismatch between the interdecadal variability of storm losses in Europe, estimated from wind data using a conventional approach, and of indices of the large-scale atmospheric circulation (teleconnections), such as NAO or AO. This lack of agreement may have critical implications for insurance companies and the general population, thereby being very pertinent and within the scope of NHESS. A new hemispheric geostrophic index (HGI), based on the 700 hPa geopotential height, is then proposed as an alternative to the more conventional indices, showing a higher correlation with the recent changes in storm losses in Europe. It is argued that HGI, being closely related to the low-tropospheric thickness rather than to near-surface conditions, explains this better correspondence. Although these findings are scientifically sounding, I found some parts a bit too speculative, thus deserving a more accurate assessment and demonstration. The text is concise and clearly written. The quality of the figures can be improved. Some revision suggestions are outlined below. Hence, I recommend the publication of this manuscript after some revisions outlined below in the specific comments.

- The author is very grateful to the referee for their comments which have improved the quality of the manuscript.

Specific comments:

Section 2.1: please describe in greater detail the datasets and the quality of the data. The average of the two reanalysis products (ERA5 and reanalysis) is also worth explaining, preferably taking into account previous research.

- Section 2 has been expanded in the revised manuscript contains much more information about the data, in particular the historical losses because they are critical to assessment of the new dataset.
- The NCEP reanalyses are no longer used, hence averaging is not applied. The referee may wish to understand the motivation for reanalyses averaging, even though it is no longer used. It was included to support the new climate index suggested in the original manuscript. The zonal index was a function of tropical heights in the 1950s and 1960s when observational density was low hence reanalyses values are more susceptible to model biases. Based on findings in Bengtsson et al. (2004), and a recommendation in Thorne and Vose (2010) to use ensembles to reduce non-meteorological trends caused by assimilation of inhomogeneous observed data, averaging was applied. However, the revised manuscript has its focus shifted onto giving more details of loss dataset development and validation, with less material on climate indices, and no new, extended zonal index. Development of a new index with stronger connection to 21st century losses is now suggested for future work.

Section 2.2: the use of 11-yr running means without values at the ends of the time series can also be improved using other more advanced methodologies, such as a low-pass filter with a cut-off frequency at 10 years.

- The author fully agrees. The revised manuscript uses a fourth-order low-pass Butterworth filter with cut-off frequency at 10 years.

Ln 104: Please specify "...to the present day".

- Done (at the start of Section 3 in revised manuscript).

Section 3.1: the limitations of the event loss equation are not stated, including their potential contribution to the recent bias. This is a very important aspect to discuss.

- The new section 4.2 of the revised manuscript contains an expanded discussion on potential causes of the flatter trend in the original loss dataset. It considers the three main candidates: accuracy of observed trends for both losses and winds, and whether the relationship between winds and losses is stationary, as presumed by the modelling. More specifically, the third paragraph of Section 4.2 contains a discussion on whether the event loss equation contains a non-stationarity which could cause a loss trend.

Sections 3.2 and 3.3: an assessment of the statistical significance of the trends and divergence is essential. For instance, the statements in Ln 142-143, 161-162 and 207-208 are very vague and need to be proved using robust statistical analysis of trends and inversion points.

- Formal statistical testing of key results should have been done in the original manuscript and the author greatly appreciates this feedback.
- The revised manuscript now reports on results from statistical testing of key reported differences: between industry observed and new modelled losses, and between the timeseries of final modelled losses and climate indices in the 21st century. More specifically:
 - Section 4.1 contains statistical testing of the differences between the original loss dataset and the PERILS estimates.
 - Section 4.4 contains results of formal statistical testing of the difference in means between two periods: (1980/81 to 1999/00) and (2002/03 to 2021/22), for both Loss and SSI
 - Section 5 contains results from testing of the difference in means (2010/11 to 2021/22 seasons) between various climate indices and losses.

Ln 231-232 seems to contradict the use of a zonal/hemispheric index. Please clarify.

- Regarding the original manuscript: these lines referred to a zonal index based on surface pressures alone, and how its decadal-scale variations are strongly related to NAO and AO. In contrast, the proposed zonal index also included thickness from surface to 700 hPa, and as a result behaved differently from a zonal index based on surface pressure alone.
- Note that the proposed zonal index is removed from the revised manuscript. Instead, the study is now focused on developing a validated timeseries of windstorm losses. Development of a better climate index is suggested as a candidate for future research.

The last paragraph of section 4.2 deserves a better discussion, including a more detailed analysis and discussion. Please revise.

- Section 4.2 of the original manuscript concerned the observed signal-to-noise ratio of a proposed new climate index. As mentioned above, the proposal to use a new zonal index is removed from the revised manuscript, and instead suggested as a topic for future study.
- (This decision was made because the fuller description of work to establish a valid loss history has lengthened manuscript. A further extension to understand why standard climate indices are not reflecting low levels of storm damage in recent years, and to describe and analyse a new climate index, would result in a manuscript of unsuitable length.)