

Comments on “The Named Storms Catalogue: unlocking learnings from past events”

This work is really interesting, and I appreciate the efforts of the authors in bringing forward a naming convention for mid-latitudes that has historically been reserved for tropical cyclones. I feel that the document should be a bit more accessible to the reader, as currently it reads more as a technical report. Though I realize that the nature of this study does require the display of a lot of important data, my review is primarily to provide suggestions that can enhance the communication of this important information.

We thank the reviewer for taking the time to provide their comments and constructive suggestions. We have worked on an improved version of the manuscript based on the reviewers' comments and we provide detailed replies to their comments below. We do ask the reviewer to keep in mind that this is not a typical journal article but rather a “Data description article” and it therefore follows slightly different structures and has slightly different objectives. The focus is on introducing the dataset itself and not results derived from it.

My comments listed below are by line number, with the more substantive comments listed with an asterisk

1. Line 17: Generally, the abstract should be a self-contained document, without any citations. I suggest that this citation for the catalogue be inserted in the body of the text, soon after the beginning of the Introduction, just after line 25.

Thanks for the comment. This citation was included at that point by requirement of the journal editorial team. It is part of the structure of this type of publication which is designed to introduce a dataset.

2. *Abstract and the study, in general: I appreciate that extratropical cyclones are typically crucial to the production of extreme weather, most notably with respect to wind and rain and snow. Nevertheless, in North America, many extreme precipitation events are associated with surface fronts that are placed in deformation zones between two synoptic-scale anticyclones, with no surface cyclone. This is not intended to denigrate the importance of the work. I simply offer this as an opportunity for future work.

We thank the reviewer for this helpful comment and agree that impactful precipitation can arise from synoptic situations other than extratropical cyclones, including frontal systems embedded within deformation zones between anticyclones. The intention is not to imply that all impactful weather is associated with extratropical cyclones, but rather to provide context for why named extratropical cyclones are important in the UK setting. As the reviewer notes, extending this type of catalogue-based approach to other

impactful synoptic situations would be valuable future work, although such events are not currently captured by the storm-naming framework used here.

3. *Table prior to line 85: This table needs a caption with the date conventions and acronyms defined. This information belongs in the caption, and not exclusively in the text. In fact, this table should be identified as Table 1.

Thanks. We have now included a caption for the table in the revised manuscript, and table numbering has been changed accordingly:

Table 1: Sources of coastal information, detailing coverage period, resolution and frequency of the variables. Dates are presented in day/month/year format.

The table has also been simplified to include only the details needed for this assessment.

4. *110: I am assuming this is the relative vorticity. Also, the numbers that are shown in the subsequent tables are stated as units of sec^{-1} . That is fine, except that you should indicate the units as “ 10^{-5} sec^{-1} ”

Thanks. This has been addressed in the revised manuscript.

5. *Table 2, at the top of page 7, referring to “Maximum vorticity”: See comment 4. The units should be in 10^{-5} sec^{-1} . It is also preferable to use exponents rather than “1/s”

Thanks. This has been addressed in the revised manuscript.

6. 186: What is “Section 0”?

Thanks. This was an error in the hyperlinks and has been fixed in the revised manuscript.

7. *212: How credible is the ERA 5 in its representation of 10-m winds and rainfall amounts?

Thanks. This has now been addressed in Section 2.1 of the revised manuscript, which now includes this additional comment:

“Despite being subject to known biases, the use of a consistent dataset to derive storm metrics enables meaningful ranking and comparison of storms, even if the absolute values of the metrics are biased.”

8. Table 2: Units should all be expressed in exponents and not with slashes.

Thanks. This has now been addressed in the revised manuscript.

9. Figure 2 caption should include the explanation of nomenclatures, such as “15-16”, etc, “SON”, etc. Yes, I know what you mean but not all readers necessarily would know.

Thanks. This has been addressed in the revised manuscript.

10. *240-242: How do you define “meteorologically weaker systems” and more particularly, how do you objectively quantify “increased exposure of the population” for the summer?

As part of the Met Office National Severe Weather Warning System, the UK has a team who work with local and national government, emergency planners and responders and other infrastructure agencies to understand where heightened sensitivities to weather events may occur, including population movements (e.g., through tourism or major events). This helps inform impact potential and warnings.

11. Figure 5 is very nice!

Thanks!

12. *Figures 6 and 7: These swarm plots are really difficult to see and appreciate. There is considerable empty space in each panel, suggesting that the font sizes could be increased for improved readability.

Thanks for the comments. We have increased the font sizing in all the plots to improve readability. We have chosen to use swarm plots as they allow to pinpoint individual events unlike other types of plots used to compare sample distributions.

13. *Figure 8: As for the previous comment, consider increasing the font sizes of the text in each panel.

Thanks. This has been implemented in the revised manuscript.

14. *panels b, c, and d of Figure 9: Consider increasing the font sizes.

Thanks. This has been implemented in the revised manuscript.

15. *Caption for Table 3: I am assuming the vorticity values are all in units of 10^{-5} sec^{-1} .

Thanks. This has been implemented in the revised manuscript.

16. *Tables 3 and 4: Here is where I suggest that the units from Table 1 be repeated here in the captions. It is too unwieldy to constantly go back to Table 1 for reference.

Thanks. These tables contain more than 10 variables each. We chose not to include all the details in the caption to keep it manageable and we point to the table with all the definitions and units. The purpose of the table is to compare events, which is mainly done through the ranks, which are unitless and their derivation is described in detail in the caption.

17. *Figure 10: See comment #14.

Thanks. This has been implemented in the revised manuscript.

18. *Figure 11: See comment #14.

Thanks. This has been implemented in the revised manuscript.

19. *Figure 12: Consider increasing the font sizes in each panel. Also, each panel should be labeled as a, b, c, and d. Panel a lacks the shading contrast needed to discern the differing maximum wind gusts.

Thanks. The labels and larger font sizes have been included in the revised manuscript.