

Unravelling the wind impact of clusters of storms, a case study over the French insurer Generali

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This paper aims to (i) link insurance claims to individual ETCs, (ii) apply the method to clusters of ETCs and (iii) assess the impact of storm clusters on insured losses. Overall, the paper achieves the aims. In places the language used in the paper is overly emphatic for a piece of scientific writing and rewriting is needed to ensure that all statements are supported by evidence (see comments below for specific examples).

General comments

1. In many places the authors describe their work as fundamental, significant, valuable and a step forward. It should be left to the reader to evaluate the importance and novelty of the results presented. Please remove all emphatic adjectives.
2. There are several statements in the paper referring to small storms, however I could not find any description of how storm size was measured. The authors need to include this, or be more precise about what is meant by small storms, perhaps it refers to the intensity or duration of the storms rather than their physical dimensions?
3. The evidence to demonstrate the validity method is described in sections 4.2 and 4.3. This is after results using the method to link storm occurrence to losses (figure 6b, section 4.1). It would make more sense if the paper were reordered to demonstrate the method before it is used. Also, it would be helpful to provide quantitative information regarding the partitioning of losses between the storms in the cluster as well as partitioning the number of claims.

Specific comments

4. **Title:** Is the word 'Unravelling' necessary in the title? This verbose language is common when using AI to suggest a title so should be avoided.
5. **Line 5:** The authors describe their own work as a cornerstone for insurance and reinsurance processes. This is a very bold statement and should be left to the reader to determine how fundamental the methodology presented is.
6. **Line 19:** Here and elsewhere the storms are described as being displaced, I think path or track might be a more familiar word to use.
7. **Line 24:** The SSI should be explained in more detail. What does it measure?
8. **Line 32:** A Poisson distribution describes events that happen randomly and independently. I think that there is no reason why a Poisson distribution with a large mean cannot also have a large variance.
9. **Line 44:** The dispersion metric can be used globally I believe. Although I agree that it might not be suitable for impact assessments.
10. **Line 55:** How does the representation of hazards in insurance loss models lead to damage prevention?
11. **Line 77:** This sentence does not have an end. What advantages are unlocked? Perhaps 'unlocking several advantages' is not needed in this sentence?
12. **Line 79:** Where in the paper are the environmental factors leading to damage investigated?
13. **Line 79:** Here the authors describe their work as 'significantly enhancing our understanding of storm clustering events'. This is a bold claim and perhaps best left to the reader to decide on the usefulness of the paper.
14. **Line 83:** The assessment of reliability is difficult since there is no truth with which to evaluate the method. Perhaps remove the word reliably?
15. **Line 98:** By displacement of trajectories, are the authors referring to the minimum storm track length?
16. **Line 101:** What is the impact distant from? The storm centre or metropolitan France?
17. **Line 105:** Closest point to what? Does this refer to the location along the storm track that occurs closest to a longitude of 7.5W?
18. **Line 110:** It is not clear what the numbers in the curly brackets refer to.

19. **Line 113:** Earlier it is stated that a cyclone duration of 24hours is used, but here the authors state that the conditions on cyclone duration and intensity are 'relaxed'. What does this mean?
20. **Lines 114 and 252:** How do 'relaxed' constraints on cyclone duration and intensity refer to the speed and size of the storms considered? Additionally, on line 252 the authors refer to small storms, how is storm size determined?
21. **Line 118:** I don't think the authors have included any evidence to support their statement that including storms 'of all scales' reduces the bias. What bias are they referring to and how have they determined the scale of the storms?
22. **Line 124:** Earlier the radius of the storms considered for impact was set to 1300km but here it is reduced to 700km. Which is used in the study and why are 2 radii for impact mentioned?
23. **Line 177:** How are the robustness and reliability of the results quantified?
24. **Line 187:** What does the closest local maximum refer to?
25. **Line 188:** What does the number of local maxima refer to?
26. **Line 201:** Here the authors state that lighter colours indicate better results. What is meant by better and is this the case for all 3 tuneable parameters?
27. **Line 237:** How are the authors quantifying the accuracy/preciseness of their method? What are they comparing the method to?
28. **Line 248:** Here and in 12 other locations the authors use the phrase 'underlines'. This is quite repetitive use of language and alternative words could be used.
29. **Line 259:** Figure 4 does not show the intensity of storms or the vulnerability, so it is not clear what the authors are using to support this statement.
30. **Line 263:** Shift usually means a change. I believe the authors are simply referring to a difference here.
31. **Line 266:** What does 'cst' mean? Is this euro cents?
32. **Line 268:** What is restricted about the winter 2018/2019 analysed by Mision Risques Naturels?
33. **Line 276:** How is the impact of the clusters measured? What criteria is used to class clusters as high-impact?
34. **Line 277:** Is an impacting storm one that resulted in loses for Generali only or one which has a track within 1300km of France?
35. **Line 302:** What is meant by 'far from the 100%'?
36. **Lines 312-324:** These paragraphs repeat what is describes in earlier paragraphs so should be removed.
37. **Lines 397-403:** This paragraph is speculative. It does not describe the results from the paper so should be reworded or removed.
38. **Line 417:** What is meant by a gathering around storms with at least 50 claims?
39. **Line 419:** What is meant by 'highly transposable to other outlooks'? I am unsure what an outlook is.
40. **Line 443:** By 'came alone' are the authors referring to non-clustered storm events?
41. **Line 474:** The authors evaluate their framework as valuable. This evaluation should be left to the reader.
42. **Line 484:** The authors describe their findings are a step forward in understanding. This evaluation should be left to the reader.

Typographical errors

1. **Line 23:** The sentences describing windstorm metrics should form a separate paragraph since it introduces a new idea to the sentences preceding them.
2. **Line 47:** Do you need both event and impact here?
3. **Line 65:** Here 'including' should be 'such as'.
4. **Line 89:** I think 'over' should be 'including'?
5. **Line 93:** ERA stands for ECMWF ReAnalysis so it is not necessary to include the words 'historical reanalysis' afterwards.
6. **Line 103:** I think 'landfall' is more commonly used than 'landing'.
7. **Line 127:** Should 70km be 700km to be consistent with line 124?
8. **Line 149:** The 'st' in italics should be roman text.
9. **Line 203:** What is the 'peal date'?
10. **Line 354:** Why is approx. in italics?

11. Line 426: Why is the word 'soley' included in this sentence?

12. Line 449: Why is an 'double hyphen used here?