

Nat. Hazards Earth Syst. Sci. Discuss., referee comment RC2
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Comment on nhess-2020-413

Anonymous Referee #2

Referee comment on "Social sensing of high-impact rainfall events worldwide: a benchmark comparison against manually curated impact observations" by Michelle D. Spruce et al., Nat. Hazards Earth Syst. Sci. Discuss.,
<https://doi.org/10.5194/nhess-2020-413-RC2>, 2021

GENERAL COMMENTS

The paper entitled "Social sensing of high-impact rainfall events worldwide: A benchmark comparison against manually curated impact" presents a valuable contribution to identify rainfall events generating flooding or landslides with tangible impacts on the population. Specifically, the Authors compared events identified with the proposed procedure based on the use of social media, with events included in an existing database (Met Office Global Hazard Map - GHM), verifying the related accuracy. Generally, the paper meets the scope of NHESS resulting well structured and presented, with a critical analysis of findings provided in the Discussion section. Despite this, I identified some points that the Authors should address with the aim of improving the paper. In my opinion, the several limitations affecting the use of Twitter data do not allow to use the proposed procedure at global scale, as well as many criticisms highlighted in the Discussion section should be limited since they depend on the research design decided by the authors. In addition, more references to similar studies should be included in the Introduction section and some changes should be performed to clarify both the methodology and results sections, as highlighted in the specific comments.

SPECIFIC COMMENTS

INTRODUCTION

1) The use of social sensing for the analysis of impactful rainfall events does not represent

an innovation since many studies already focused on this topic in the past years. I suggest to include more references about this, trying to cite also works based on other social platforms.

2) Please, provide a brief description of the Met Office and its activities. In addition, I suggest to provide a comparison between the Met Office Global Hazard Map (GHM) and other available global databases that you might have used to test your procedure.

METHODS

3) Line 88: In my knowledge, there are many countries where the use of Internet and, as consequence, of social media is not so widespread to highlight the occurrence of weather events. I suggest to take into account such consideration and modify this sentence accordingly.

4) Line 106: Please, specify the meaning of “unique events”

5) Line 122: Before in the manuscript, you stated that only tweets containing one or more keywords were downloaded. Here, you are stating that a filtering step was necessary to extract only those with one or more of the selected keywords. Please, clarify this inconsistency.

6) Generally, the paragraph 2.3.2 seems quite confused. In order to fix this issue, I suggest to list the several steps, trying to clarify their description.

7) Lines 227-228: Please, clarify the use of polygons and the overlapping concept

8) Lines 228-230: I suggest to move this sentence at the end of the paragraph

9) Line 234: The term “likely” is repeated two times. Please, modify.

10) Line 234: Provide a more convincing explanation on why you select the “place with the largest population”. Contents in the brackets are quite trivial.

RESULTS

11) The results section is structured in too many parts. Given that this may confuse the reader, I suggest to join some sections trying to reduce the used Figures and text. Some Figures, for example, may be unified in multiple panels.

DISCUSSION

12) I believe that the core points of the work are the used methodology and validation strategy. In the light of this, it may be useful avoiding a lot of information about the comparison between social sensing and Met Office data, since the latter are affected by numerous biases that you have correctly highlighted. In addition, it is important to note that some limitations are due to the research design chosen by you (e.g. the analysed time frame). Therefore, I think that sentences related to these aspects should be limited.

13) Taking into account the several limitations affecting the proposed procedure, I disagree to propose it as a valid methodology at global scale. Probably, the country scale represents the best one, allowing to limit many drawbacks such as the used language.