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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Natural hazard events affecting transportation networks in Switzerland from 2012 to 2016" *by* Jérémie Voumard et al.

Anonymous Referee #2

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Summary: While it is clear that the database outlined in the manuscript represents a large amount of work and a potential contribution to the discussion of natural hazards impacting transportation networks, there is significant reworking that is required before this manuscript could be considered acceptable for publication. The authors present a new database developed for hazards impacting transportation networks within Switzerland, however, the paper requires major reorganization, clarifications in the methodology and interpretation of results, substantial shortening, and significant improvement in the language and grammar before it can be published. Below are some major comments and remaining questions about the manuscript that may help to clarify and improve the overall article:

Database compilation methodology:

It is not clear what the authors deems as the minimum impact or threshold of when a natural hazard event is considered. The authors cite that a fraction of their database has no affect on the roadway, trail or railway in terms of disruption, etc. So why is it included in the database? The authors first must be clear what they are setting as the minimum threshold for being included in the database. It is also not clear from the current presentation of the methodology how the volume of the events or timing of events are determined. There are also variations in the reporting of the date range the database is compiled from, citing 2011-2016 and 2012-2016 throughout the manuscript. The methodology of using Google Alerts is reasonable, however, since this practice was only started in 2014, there are clear discrepancies between the number of events obtained before this practice was adopted and after. The authors specifically cite the change in number of hazards reported (a 2 fold increase from before and after 2014!). The comparison to the Canton of Vaud dataset for hazards is confusing. It appears that it could be a useful dataset from which to compare but the authors are not clear about what specifically the differences are, they merely report the number of events. It may be helpful to look more into the differences in types of events between these two databases to provide more quantitative metrics on potential biases with the database presented in this paper. The determination of event cost is interesting and could be a valuable contribution to the paper if it was further substantiated in its own section. In the current way it is presented it is a bit unclear how robust or realistic the assigned cost values are.

Presentation of database statistics:

While it is important to highlight the different characteristics of the database, I feel there is no need to present every aspect of this database as percentages based on the type of hazard and attribute being considered. This makes the paper much longer than it needs to be and in my opinion does not add value. I would recommend the authors significantly reduce the number of figures into several key attributes that the authors feel best describe the unique aspects or findings of this database and include any

other metrics or distributions the authors feel are relevant in supplementary material (or not include them at all). The manuscript presents many statistics without much or any discussion of why it is significant, what is suggests about the nature of the hazard for the specific attribute collected or cites other sources of information or analysis that supports the findings. Many of the sections outlining the statistics end with one to two sentences that should be significantly strengthened to clearly summarize the points being made.

Overall structure and content:

The paper overall is currently much longer than it needs to be with far too many figures. I recommend the paper be drastically shortened to highlight the most salient points in the database and take more time in the discussion section to outline how this database can be used or should be interpreted to make clear points about the role of small natural hazards on transportation networks in Switzerland. The discussion section at present seems to go off on several apparent tangents about the limitations and lack of interest in this type of database; however, the authors could instead use this opportunity to outline the value of the database despite its limitations and the potential applicability of the database within communities of interest. Finally, there are a large number of grammatical and language errors in the manuscript that must be corrected.

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