

Interactive comment on “Geo-climatic hazards in the eastern subtropical Andes: Distribution, Climate Drivers and Trends” by Iván Vergara et al.

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Received and published: 5 February 2020

The authors try to correlate the spatio-temporal occurrence patterns of geo-climatic hazards (G-CHs) in the Andes near Mendoza, western Argentina, to precipitation and temperature patterns. Thereby, they focus on snow avalanches and landslides. The study presents a highly relevant topic, and the manuscript is generally concisely and well written, structured, and illustrated. Not all statistical analyses yield significant results, but this is clearly communicated, so that it is possible to capture the essence of the outcomes. I have some recommendations to the authors which should be considered before publication. Consequently, I suggest minor revisions.

- Even though the paper is well understandable, there are some issues of grammar

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and style. Improvements should be included in the revised version, even though final polishing can be done through copy-editing anyway.

- The 15 km buffer on both sides of the Río Mendoza appears a bit arbitrary to me. Is there a specific reason why exactly this distance was used? And might it be an alternative way to consider those catchments draining to the Mendoza Valley, instead of a fixed distance? This would probably not change the results at all – but the maps (which are in principle very nice) look a bit awkward with the buffer of the elevation map and the catchments with G-CHs reaching beyond that buffer.

- In Line 121, it is mentioned that the G-CHs are concentrated in ravines, talus cones, and rock walls. I suppose that the individual zones were derived by computing the catchment areas (particularly for the ravines). This is absolutely fine, but you should mention it explicitly.

- It would be interesting to know a little bit more about how reliably you could determine the occurrence of daily precipitation. You mention the use of the CMORPH data. Did this work well? And how did you do it before 2002? Particularly convective events can have a very patchy occurrence, and are not necessarily recorded at stations. How did you deal with this issue, and do you expect that it significantly influences your results?

- Table 1: some of the meteo stations do not cover the entire investigation period – could this induce some bias in the derived trends? You might wish to briefly discuss this issue.

- Fig. 1: maybe you could put the names of the major settlements, or label the meteorological stations. Some labelling would be nice in this introductory map.

- A minor issue in the legend of Fig. 5: the probability of annual occurrence is a continuous number. This should also be reflected in the legend – as it is now, e.g. a probability of 2.5% would not be covered at all. Better write: 0; >0-2; >2-5; ... etc.

2019-381, 2020.

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