

Point-by-Point Reply to Reviewer Reports on the manuscript entitled

The Parraguirre ice-rock avalanche 1987,
semi-arid Andes, Chile

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A holistic revision

by J.J. Fürst, D. Farías-Barahona et al.

First of all, we want to thank all reviewers for the critical and useful comments on the manuscript. It was with great pleasure that we read their general appreciation of our work and the unanimous recommendation for publication. In the following, all review comments are repeated and addressed. Our responses are indented. Answers are given in blue and actions in orange. *Italic font* is enquoted and used to present newly added or modified text passages in direct answer to a specific comment.

We are very delighted about the fact that all three reviews are positive and supportive for publication in ‘Natural Hazards & Earth System Sciences’ (NHESS). Most comments have an editorial character. We tried to accomodate them to the best of our knowledge. If reviewer comments disagree, a compromise is suggested. Furthermore, reviewer #3 requested additional discussion of limitations of the employed methods (DEM differencing, climate data scarcity, ...). We accounted for these. In summary, we hope that the editor can continue to consider our manuscript for publication in NHESS.

REFeree #2

Thank you very much for the opportunity to review the manuscript titled “The Parraguirre Ice-Rock Avalanche 1987, Semi-Arid Andes, Chile — A Holistic Revision.”

This well-written manuscript offers a compelling and thorough reevaluation of a significant disaster event that occurred over three decades ago. The authors have effectively resurrected this event through the lens of modern analytical techniques and technologies, which were unavailable at the time of the original occurrence. By integrating contemporary methods, this study helps bridge knowledge gaps and contributes meaningfully to disaster science by reassessing historical events with improved precision and understanding.

Thank you very much for these kind words and the high esteem for studies that reassess historical events aiming at improving our understanding of the flow progression. Your comment is deeply appreciated and encouraging us in our ‘resurrection effort’.

ACTION: No actions required.

I commend the authors for their comprehensive approach; however, I suggest a few minor revisions to enhance the manuscript’s clarity and accessibility:

1. Abstract: Please briefly mention your methodological approach in the abstract to better inform readers about the basis of your analysis.

Thank you for this comment. You are right - we were rather vague on the specific methods and data that are now available to us.

ACTION: Rephrased respective sentence in the abstract as follows:

‘We therefore retrace the past event using data and techniques that are now at hand. These include historic topographic maps, aerial imagery, meteorological and hydrological records as well as multi-phase mass-flow modelling.’

2. Manuscript Length and Precision: The manuscript is quite extensive, and at times, overly descriptive, which may hinder reader engagement.

- The data section could be more concise while still retaining essential information.

Thank you for pointing us at this section. We were able to reduce the text passage from 45 to 30 lines without (hopefully) too much loss of information.

ACTION: Text passage was significantly reduced.

- The discussion, though critical, becomes lengthy and should be streamlined to maintain focus and readability.

Again this appears to be a constructive comment. We could identify several passages in the discussion that showed redundancy with previous sections. Moreover and in accordance with a comment from Reviewer #1, a sub-subsection on water budgeting was separated to facilitate readability. With this, we truly hope that the text became more concise and can better maintain focus.

ACTION: Complete overhaul of discussion section. Also see answer to Reviewer #1

- The conclusion can be more impactful if limited to two well-crafted paragraphs summarizing key findings and implications.

Thank you for this comment. We succeeded to streamline this section and make the descriptions more concise. We could however not follow the suggestion to condense the conclusion in 2 impactful paragraphs. The reason is that reviewer #1 requested to add an extra outlook paragraph. We therefore kept the initial subdivisions.

ACTION: A copy-edit of the conclusion section was employed that resulted in a text reduction of about 20%. Another paragraph was added on request of reviewer #1.

Overall, this is a valuable and timely contribution, and with these refinements, the manuscript will become even more effective and reader-friendly.