

Responses to Referee and Editor

General comment

We thank Referee #3 and the editor for reviewing our manuscript again.

Response to Editor

We thank Jürg Schweizer for giving our manuscript such a detailed proofread. We have fixed all of the typos that were pointed out.

Response to Reviewer #3

We appreciate Referee #3's perspective that our study has a number of contributions that include insight on a geophysical relationship, methodological advances, and operational insight. In our opinion, the focus of our manuscript is on the examination of the relationship between atmosphere-ocean oscillations and the nature of avalanche hazard in western Canada taking advantage of the avalanche problem information published in public avalanche bulletins. We see our statistical modelling approach more as a means to an end and an attempt to use the available data in the best possible way than an explicit methodological contribution. Hence, we feel that the present discussion of our results has the right focus.

While we recognize that TC is an international journal, we feel that a study mainly focusing on the effect of a global phenomenon in a specific location is a meaningful contribution. Our discussion focuses on relating our results to studies examining the effect of the examined oscillations on the winter weather in our study area as we believe this is an important step for highlighting the validity of our approach. In our opinion, explicitly comparing our results to studies in other geographic regions such as Keylock (2003) (Iceland) and Garcia-Selles et al (2010) (Eastern Pyrenees) is challenging due to differences in how avalanche activity is represented and statistical approaches.

Thank you for noticing that we forgot to delete the reference to climate change in the abstract. We fixed the abstract to make it consistent with the content of the manuscript. Not focusing on the potential insight of our results on the effect of climate change on avalanche hazard is also the reason why we did not include references to avalanche research studies that had a climate change connection. In our opinion, Keylock (2003) and Garcia-Selles et al (2010) are the only relevant non-North American studies that exclusively focused on the effects of atmosphere-ocean oscillations.

To further clarify the motivation for examining the link between atmosphere-ocean oscillations and the season nature of avalanche hazard and highlight the operational value, we slightly modified the text in the abstract (addition underlined)

Since the predictability of the most important atmosphere-ocean oscillations is continuously improving, a better understanding of their effect on avalanche hazard can contribute to the development of informative seasonal avalanche forecasts in a relatively simple way.

and the conclusion section (addition underlined)

With the predictability of the most important atmosphere-ocean oscillations continuously improving, this study contributes towards the knowledge necessary for taking advantage of routine atmosphere-ocean oscillation predictions to create informative seasonal avalanche forecasts for western Canada in a relatively simple way.