

# Response to review by Erich Peitzsch

Frank Techel, and co-authors

We thank the reviewer for the detailed and constructive reviews of both the initial manuscript, and now, of Part B. We sincerely appreciate the time and expertise invested in these reviews, which helped identify points requiring clarification and improvement.

Below, each reviewer comment is reproduced in **gray**, followed by our response in **blue**. Planned revisions to the manuscript are indicated in **red**.

## General Comments

In this manuscript, the authors present the second part of the EAWS Matrix development process – analysis of operational implementation. The first part (A) in this pair of manuscripts, which I also reviewed, describes the conceptual development of the Matrix. Here, part (B), the authors examined Matrix usage and implementation across avalanche warning services throughout multiple countries. They analyzed the three factor classes of snowpack stability, frequency of the lowest snowpack stability class, and expected avalanche size and, ultimately, the danger level from 26 warning services over three seasons. They presented results aggregated across all groups as well as segregated by avalanche problem categories (dry snow and wet snow/gliding). Finally, they used more detailed data from specific services to assess whether specific actions in any given service helped explain differences in assigned danger level where there were sometimes two assigned danger levels.

I reviewed the original submission prior to portioning the work into two separate but conceptually linked manuscripts. The authors adequately addressed my original comments. I think the new structure of a pair of manuscripts improves the readability and organization. I also think the new analysis provides a more direct assessment of the efficacy of the Matrix across many warning centers and multiple seasons, rather than individual forecaster assessments throughout one season. The manuscript is well organized. The methods are appropriate for the data. The results are clearly presented with informative and effective figures, and the discussion provides sufficient interpretation of these results. I think the limitations are clearly presented in the beginning of the discussion and in the dedication section (6.3). I only have a few minor questions/suggestions for the authors to consider. Overall, I think this is a very worthy contribution to the field of avalanche forecasting and improves our knowledge and use of forecasting tools.

## Specific and Technical Comments

- **Segregation of dry vs. wet snow problems:** What is the reasoning for separating dry snow with wet snow problems for the analysis. Clearly, differences exist, but providing some explanation as to why you segregated based on this in section

4.2 would help. For example, you could have also partitioned within dry snow problems to examine differences between new snow/wind slab and persistent slab problems.

- **Lines 416–419:** By recommending three specific cells be reduced to one danger level, do you think that would preclude some forecasters from using the nuance and local knowledge of the warning service that you discuss earlier that leads to using either level 3 or 2 for those cells? In other words, does reducing the choice to 1 danger level exacerbate the problem of forecasters changing their factor assessments (a potential outcome that you mention in lines 355–356) in order to reach the now removed danger level? - **This is an important point, and frankly: yes, it may well be that this exacerbates the problem of forecasters changing the factor input to be in line with a danger level. - We'll add a remark along that line in the respective paragraph in the discussion section.**
- **Line 2–3:** Second sentence in abstract isn't a complete sentence. Consider:  
“To promote greater consistency. . . , a revised version of the EAWS Matrix – a structured. . . – was developed.” - **Thank you for pointing this out. We'll change accordingly.**