

# ***Interactive comment on “Exploring the relationship between avalanche hazard and large-scale terrain choices at a helicopter skiing operation – Insight from run list ratings” by Reto Sterchi et al.***

## **Anonymous Referee #2**

Received and published: 13 May 2019

General comments: The relationship between avalanche hazard and skiing runs of an heliskiing operation was described quantitatively using a general linear mixed effects model. The results show that whether runs in gentle terrain or below treeline were skied hardly depends on the avalanche hazard, whereas runs in complex alpine terrain are affected by the avalanche hazard. The effect of avalanche problems is diverse. Some problems effect the closure of runs (e.g. deep persistent slab problem). Further the results show that runs which have recently been skied are open more quickly than others in comparable terrain. Although these results are not surprising, they confirm

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habits of professional guides quantitatively which is new. The description of data and methods is mostly clear and understandable. The quality of text, tables and most figures are appropriate (details below). The paper is a valuable contribution confirming important factors for route selection in a quantitative way. The results can contribute for further development of tools to assist decision making on opening runs for mechanised skiing. The paper is acceptable with minor revisions.

Specific comments: Title and Abstract underline the content of the paper.

Methods: Page 4, line 15: “Overall, Statham et al.(2018) describe . . . . . (delete “and”)  
Page 4, lines 20 to 31: this content does not really belong to the description of the data. In my opinion it also could be skipped. Page 5, lines 12 to 30: This part rather belongs to the introduction and could be adapted in a way to emphasise the motivation for this study. Page 5, line 18: Better talk about avalanche sizes on figures 1-3 e.g. because the wording has changed in the European classification. Page 8/9: The explanatory variables and interactions are well explained but could be summarized in a table for a better overview. Further the illustration and explanation of the model is not clear. Better describe model with a formula than with figure 3. Or change Fig.3 for better understanding. Page 10, lines 17 to 24: This section rather fits to the results chapter and explains Fig. 4.

Results: Page 11, line 8: Mention value in the text (e.g. in brackets) for better understanding. Page 12, Fig. 4: Shading in graphs is not clear. What is 50%, 80% and 95%. Better reduce to 2 percentages. Label of x-axis is missing. Mention avalanche hazard as x-axis in caption text. Page 15, line 28: Table 2 not 1 Page 18, Fig. 5: Figure is too small and not readable. Label of x-axis is missing.

Figures: Fig. 2: Is rather small. Could be expanded to entire page width. Fig. 4: Label of x-axis is missing Fig. 5: Figure is too small and not readable. Label of x-axis is missing.

Technical corrections: Page 16, line 5: Typo: “. . . . ., the influence of different. . . . .”

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Page 16, line 12: Typo: “ . . . . ., they can gain size and speed.” Page 19, line 4: Typo: “s” is missing either for “results” or “shows” Page 19, line 12: Typo: “. . . . method that is able to account for . . . .” Page 21, line 5: Typo: “. . . . .envision these decision aids to . . . . .”

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