

Dear Referee 1,

thank you for the careful reading of our article. We highly appreciate your comments, which will help to clarify and improve this manuscript. Below you find the point-by-point replies to your comments.

*General comments:*

*The authors several times refer to technical guidelines in Switzerland and Austria and to guidelines on silvicultural management. For a better overview it would be nice if the authors could cite all used guidelines in a suitable position within the Methods Section.*

>> This is an important remark. We mentioned the Swiss technical guidelines for avalanche prevention and the Swiss guidelines on sustainable management of protective forests NaiS in the third paragraph of the introduction but we did not clarify that we refer to these two guidelines and the Austrian guidelines on prevention measures for our study. We will add a sentence in line 4 on page 2955 in the methods section. We also cite the Austrian Standard Institute to clarify where the Austrian guidelines come from.

*Technical corrections:*

*Page 2959, line 6: use 'defence structures' or 'supporting structures' instead of 'snow Bridge' (I know that this term is widely used in Switzerland, Germany and Austria (in German: Schneebrücke) but it is not appropriate in English; a snow bridge is strengthened snow which spans over a crevasse).*

>> I guess you mean 'page 2950, line 6': You are right here, snow bridge is misleading. We will replace 'snow bridge' by 'avalanche prevention bridge' as we want to stress that the pressure is exerted on a single element.

*Page 2959, line 21: use 'technical' instead of 'artificial'*

>> I guess you mean 'page 2950, line 21': We agree and replace 'artificial' by 'technical'.

*Page 2954, line 3: do the authors mean snow height  $h_s$ ? In Fig.7  $h_s$  is shown as snow depth*

>> Our denotation is a bit confusing here. We will use the term 'snow depth' for the snow height measured vertically (see the European Avalanche Glossary, [http://www.avalanches.org/en/includes/glossary/glossary\\_en\\_all.html#n106](http://www.avalanches.org/en/includes/glossary/glossary_en_all.html#n106)) throughout the text. In Fig. 7 we will change the arrow of  $h_s$  from perpendicular to vertical.

*Page 2956, line 7-8 can be deleted*

>> We will delete this sentence

*Page 2956, on line 15-17 the authors mention that the vegetation height of long grass was 10 cm, and of short grass, low dwarf shrubs and strong lignified shrubs was 15*

*cm; however, this is not in agreement with Tab. 1 where the corresponding value for lignified shrubs is given with 50 cm.*

>> Good point: we will list the vegetation height for each vegetation type according to Table 1.

*Page 2958, line 27: ...observations as shown for example in Fig. 1, ...*

>> We will follow your suggestion here.

*Page 2960, line 7: ...values for acceptable gap sizes. OR: ...values for tolerable gap sizes.*

>> We will include 'tolerable'.

*Page 2962, line 12: use 'defence structures' or 'supporting structures' instead of 'protection Bridges' [I know that this term is widely used in Switzerland, Germany and Austria (in German: Schneebrücke) but it is not appropriate in English; a snow bridge is strengthened snow which spans over a crevasse].*

>> We will replace 'protection bridge' by 'defense structure'.

*Page 2962, line 13: According to the Swiss guidelines the distance between structures depends...*

>> We will follow your suggestion here.

*Fig. 9: the authors should label the third axis with 'slab length  $l_m$ '. The second line of the caption should be: 'The higher the slope angle, the higher the friction \_ must be to prevent...'*

>> We will include the label 'slab length  $l_m$ ' and change the caption according to your suggestion. We will additionally change the topic of the graph to clarify what we want to show here.

*Fig. 10, 11, 12: please use colours and symbols which are more distinguishable.*

>> we will change symbols and the colour scale of graph 10 and 12, in our opinion in 11 the colours and symbols are clearly distinguishable.

Additionally we will change the caption of the y-axis of Fig. 8 from 'Snow height' to 'snow height', remove the grid lines and include the legend in the graph.