

## ***Interactive comment on “The role of cornice fall avalanche sedimentation in the valley Longyeardalen, Central Svalbard” by M. Eckerstorfer et al.***

**S. Gruber (Editor)**

stephan.gruber@geo.uzh.ch

Received and published: 24 January 2013

This is an interesting and valuable manuscript. Its fit with The Cryosphere, however, is debatable and in its current version not presented with enough clarity. If the authors resubmit a modified version, the fit with the scope of The Cryosphere must be evident to a reader of the manuscript in order to justify acceptance.

In a possible revision and its accompanying rebuttal letter, I ask the authors to address all the comments raised so far, focusing on improving the manuscript rather than on defending its present form.

In their interactive comments, the authors argue that the “GEOMORPHOLOGICAL role C2855

[. . .] is of interest to a broad readership, thus we chose to submit to The Cryosphere.” Given the fact that this journal has a broad readership on the CRYOSPHERE, the significance of the findings should be presented in a context suitable to make them accessible for this audience. This can be done by e.g., placing the results in a wider (also geographic) context of interaction between avalanches and morphology.

The possibility to make the paper more concise should be evaluated carefully. The quality of the text and not “normal” lengths are relevant and one reviewer gave valuable hints. If needed, figures and detailed explanations can be moved to the appendix or into supplementary material.

As the handling editor, I have asked the reviewers to comment on the relationship of the present manuscript with other papers by the same authors. Given that several similar-sounding articles exist, it is important to know whether the unique selling point of this manuscript fits The Cryosphere – both in scope and substance. A possible decision not to publish a manuscript because its unique selling point does not fit the journal well enough is a long way from an accusation of misconduct.

Minor comments: P5000L23: Is “underrated” also referenced to Sass et al. 2010? If not, please provide reference.

P5010L2: What is the causal relationship (reference?) between continuous permafrost and rock fall?

P5014L25: What is a “rock glacier initiation line”? Given the fact that you describe a system that operates on small scales and is driven by climate, wind drift, and erosion/transport of rock, rock glacier formation is a highly heterogeneous phenomenon.

I agree with O. Sass regarding the accretion rates and believe that compensation with your factor (porosity) is important already in its definition. Otherwise you would have to explain that the mm/yr are “compact-rock equivalents” as opposed an intuitively understood change in surface elevation. It may be worth to pick up the issue of buried

snow/ice in the discussion in this context.

Rather than stating the software used (ArcGIS), state the method, e.g., “digitized on screen based on. . .” or “calculated area based on digitized polygon”.

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Interactive comment on The Cryosphere Discuss., 6, 4999, 2012.

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