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The Cryosphere
Discussions

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

M. Eckerstorfer et al.

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Dear Anonymous referee, Thank you very much for your comments.

General comments:

Also our other reviewer has commented that the paper does not fully meet the scope of TC. We hereby refer to the answer we have given to the other reviewer.

1. We state at several occasion that the only type of avalanches observed were cornice fall avalanches, sometimes triggering a slab avalanche on impact. We otherwise state that the majority of avalanches only removed parts of the snow cover and only later

spring became occasionally full-depth avalanches.

2. In the discussion, P17 L15 we discuss the rockwall retreat rates from periodic debris flows in the Longyeardalen valley. The value is with 0.0125 mm /yr significantly lower then our calculated rockwall retreat rates. As for debris falls, we have only once observed a dry avalanche, which took place on the opposite valley side of our Nybyen study site. Thus, and this is one of the main results of our contribution, cornice fall avalanche sedimentation does not rework the talus, but erodes, transports and accumulates it, forming the distinct avalanche fan landforms. Avalanche sedimentation is therefore the primary geomorphological process.

3. We are assessing if it is necessary to include the three suggested references in the manuscript. We have quite extensively cited the literature on avalanche sedimentation worldwide as well as in Scandinavia and Svalbard.

Sincerely,

Eckerstorfer et al.

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