

EGU21-15260

<https://doi.org/10.5194/egusphere-egu21-15260>

EGU General Assembly 2021

© Author(s) 2021. This work is distributed under the Creative Commons Attribution 4.0 License.



Induced glide-snow avalanches with low friction geotextiles

James Glover¹, Sebastian Althoff², Max Witek¹, Christine Seupel¹, Seraina Braun¹, and Imad Lifa¹

¹University of Applied Sciences Grisons, Institute for construction in alpine regions, Switzerland (james.glover@fhgr.ch)

²Schoellkopf AG, Rümlan, Switzerland (althoff@schoellkopf.ch)

Gliding snow avalanches are of growing concern for the management of ski areas, transport corridors and spatial planning. With a warming climate there appear to be increasing reports of gliding snow hazards in alpine regions. The management of gliding snow avalanches can be achieved through either stabilization or artificially triggering a slide. Triggering sliding is attractive because it has the potential to remove the hazard entirely. In this research, we investigate the potential of managing gliding snow avalanches through the early release of snow accumulations using low friction geotextiles.

A series of geotextiles have been installed on slopes between 25 and 35° during the autumn months and the behavior of snow accumulations observed during the winter. Initial findings indicate that reducing the basal friction can be effective in inducing early release of gliding snow avalanches. However, the interaction of the flanking snow pack and stauchwall appear dominant in the behavior of the system. This contribution reports on the initial findings of these experiments and discusses the potential applications to managing gliding snow avalanches.