

High Arctic Avalanche Monitoring in Maritime Svalbard

Markus Eckerstorfer, Ullrich Neumann, Christiansen H. Hanne

UNIS Svalbard, Longyearbyen, Norway

The arctic, high relief Svalbard landscape, largely without vegetation and with a continuous snow cover for large parts of the year, is very exposed to avalanches. Wide plateaus with 500 m deep valleys dominate the geomorphology in central Svalbard, allowing extensive snow drifting. In a changing climate and with an increasing number of people traveling around the Svalbard landscape, there is increased focus on avalanches and their meteorological control. A significant part of a three year research project (CRYOSLOPE Svalbard) is the year around avalanche monitoring programme. The results of avalanche mapping, meteorological observations and snow pit studies are collected in a database accessible online. The collected data show, that avalanches are observed year around. During autumn and the polar night only a few take place. As the air temperature increases and the maximum amount of snow are present at the same time in spring, the peak avalanche season occurs. Avalanches triggered by cornice falls form the majority. The collected data forms the important first systematic knowledge about meteorological, topographical and snowpack conditions, which trigger avalanches in Svalbard.