

ANALYSIS OF SNOW SLAB FAILURE AND ITS APPLICATIONS IN AVALANCHE FORECASTING

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Abstract

In the present work, failure of a snow slab is analyzed by accounting Normal mode criteria. The analysis has been extended to include residual stress into the model (in addition to body forces). Intensity of crack energy release rate, and displacement components have been derived and their values have been estimated. The obtained results have been compared with the existing snow slab failure models [Perla and La chappelle (1970), Perla (1980), Sigrist (2006), Schweizer (1999)]. The criteria of snow slab failure have been critically examined. The maximum stress in the snow pack and critical intensity factor of crack development has also been studied in the model. The results of the present model can be used for the avalanche release information.

Key Words : *Snow slab, metamorphism, avalanche, dynamics and stress*