

Snow Slope Stability Modeling of Direct-Action Avalanches in a Continental Climate: Red Mountain Pass, Colorado

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Direct-action, or storm related avalanches occur due to rapid loading during snowfall. Previous studies have shown that a simple snow slope stability model (SNOSS) can give insight into the timing of direct-action avalanches in maritime environments. While modeling the evolution of the strength of buried weak layers is extremely difficult, estimating the evolution of strength of new snow due to densification can be much less problematic. To investigate the potential for applying SNOSS to direct-action avalanches in continental climates, we present results of model runs for the winter 2007-08 on Red Mountain Pass in the San Juan Mountains of Colorado, and compare these results to detailed avalanche observations.