

## **Snowpack Stratification Variability in Pir Panjal Range (India)**

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Snowpack variability is of prime concern to avalanche forecasters for its direct effect on slope stability. The interplay of weather and terrain is believed to influence snowpack variability the most. While terrain is fixed, knowledge of influence of changing weather on snowpack variability for a particular slope could be of great assistance to avalanche forecasters. Thus an attempt was made to understand the spatial and temporal variations of snowpack stratification in Pir Panjal Range in Indian western Himalaya. For this purpose, several penetration resistance profiles were observed on uniform northerly, westerly and easterly slopes of Gulmarg region using standard Ramsonde during 2006-07 winter as penetration resistance profile well represents snowpack stratification. It was observed that long no-snowfall period with moderate temperatures leads to more variation in penetration resistance near the surface. However, same condition with higher temperatures and/or rainfall leads to excessive melting at the surface and in turn reduces the variability. The variability increases or reduces near the surface only. Hence, once buried under new snow, variability persists till it re-surfaces again. This study has significantly improved the understanding of the snowpack variability pattern in Gulmarg region and should lead to further improvement in Avalanche Forecasting for the area.