Snow in Scotland: SnowMicroPen analysis of natural and artificial snow samples

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The avalanche environment in Scotland differs from typical alpine environments. A warmer, maritime climate with regular high winds leads to a prevalence of dense, old but mobile snow. Melt freeze cycles and wind transport dominate snow pack evolution, with wet snow and slab avalanches being the dominant avalanche types. SnowMicroPen (SMP) measurements were performed alongside conventional snowpits in order to identify representative samples of SMP data for six typical Scottish snow types. Artificial snow was aged in a cold lab and tested with the SMP. Comparisons are drawn between the artificial snow and natural Scottish snow. It is found that artificial snow can be considered a good model material for systematic studies of interactions between specific snow types and measurement instruments.