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Observations and modelling of snowmelt in a subarctic mountain catchment

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Several factors lead to there being large variations in the distribution of snow over mountainous topography. On large scales, there can be significant variations in precipitation and temperature with elevation. On smaller scales, the accumulation and ablation of snow are strongly influenced by redistribution by wind drift or avalanches and variations in received solar radiation with slope and aspect. In this presentation, results from meterological and hydrological observations across a valley in the Yukon during snowmelt are presented. A snow model is used to evaluate how well the melt can be simulated, both when the topography is explicitly resolved and in an aggregated representation, as has to be used in large-scale models.