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Observations and modeling of meteorological factors affecting small glaciers in N-Iceland

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Observations of snow accumulation on several small glaciers in the mountains of N-Iceland are compared to meteorological factors conributing to accumulation of snow on the ground. Firstly, the precipitation is estimated from observations and simulations with the numerical model MM5 at high horizontal resolution. Secondly, snowdrift is estimated from observations of wind and other meteorological parameters. Thirdly, sublimation is estimated from meteorological observations.

The study suggests that precipitation in the region is far greater than previously considered and that this together with transport of snow by wind is of great importance for the existence of the glaciers. The study also indicates that there is substantial sublimation during periods of blowing snow, but little net sublimation from the snow cover at rest on the ground.