



Forecasting winds in Spitzbergen in different weather regimes

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A set of 7 automatic weather stations were operated in the complex terrain of Kongsfjorden in Spitzbergen in the spring of 2010. The observation period consisted of multiple types of atmospheric flow, including many days of katabatic winds as well as synoptic winds from various directions. High-resolution numerical simulations based on analysis from the ECMWF have been carried out for the observational period and compared with the observations. The main result is that the quality of the simulations (forecast) is very highly dependent upon the flow type. Synoptic-scale flow across dominating directions of terrain height contours is far more difficult to predict locally, than flow along the height contours (along the fjord). The results suggests that for lead times of 1-3 days, the flow type may be a better indicator than the lead time of the quality of the wind forecast.