



Evaluation of dynamic downscaling of precipitation in the complex terrain of Iceland

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The analysis of the ECWMF for 15 years has been downscaled over Iceland with the numerical model MM5 run at a horizontal resolution of 8 km. A systematic comparison with observed precipitation has been carried out and the main results are

1. Simulated precipitation is usually greater than observed for $T < 2^{\circ}\text{C}$, where precipitation is normally solid
2. The model reproduces accumulated precipitation equally well for all wind speeds
3. The number of small events is underestimated in many places
4. Away from non-resolved orography, long term (months, years) sums of simulated precipitation are quite correct in the south but too high in the north. This is partly due to compensating errors on a smaller time scale (days)
5. Probability of false alarms (model predicts precipitation, but none is observed) is highest in N-Iceland, particularly during winter.
6. Probability of missing precipitation events is highest in the summer inland and on the lee side of Iceland in southerly flows
7. Precipitation is underestimated in SE flows in SW-Iceland but precipitation is overestimated in N flows in N-Iceland. This cannot only be explained by non-resolved orography

The results are not only a guidance for precipitation mapping, but also for the development of the operational forecasting system.