Precipitation in Iceland in current and future climate

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Precipitation in Iceland has been simulated on 8 km grid for the period 1961-1990 using the numerical weather model MM5, forced with initial and boundary data from the ECMWF. The impact of topography dominates the variability in the mean annual precipitation. In wintertime, the precipitation in the mountains in the northern part of NW-Iceland is much greater than in the mountains in the SW-Iceland. In the summer, there is some difference, but in the inverse direction. This is presumably associated with a seasonal change in the storm tracks and possibly with the summer weakening of the temperature gradient between E-Greenland and Iceland.

Precipitation in future climate, based on dynamical downscaling by the HIRHAM model, has been studied for the Iceland region for scenarii A2 and B2 for the period 2071-2100. While there is only a little average increase in mean annual precipitation in the lowland, there is relatively large change in the seasonal cycle. The autumn is expected to be wetter, the spring drier and the winter is expected to be drier in SW-Iceland and wetter in NE-Iceland.