



Evaluation of summer precipitation from EURO-CORDEX fine-scale RCM simulations over Norway

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Regional climate models is a valuable tool for local climate adaptation. Accurate estimates of future climate conditions are increasingly important, and in Norway precipitation is of special interest. Extreme precipitation, particularly over short durations, are responsible for enormous damages to important infrastructure, hence information on a fine spatial and temporal scale is crucial.

We evaluate the ability of 7 fine-scale regional climate model simulations from the EURO-CORDEX ensemble in reproducing 3-hourly and daily summer precipitation characteristics in Norway, with an emphasis on extremes.

The two-step evaluation includes comparison of modeled precipitation to gridded observation-based datasets and station measurements, in terms of the following indices: Summer maxima, summer wet event frequency, and total summer precipitation.

We find a general overestimation by the models for all indices, with only few exceptions. Country-wide spatial averages show however that simulated summer extremes are mainly within the uncertainty interval of the reference dataset. A stronger overestimation of daily maxima compared to 3-hour maxima is evident, while the spread between models is larger for summer totals. We also find that the spatial distribution is fairly well simulated although the range of values in most models is too small. We believe that the high spatial resolution of 0.11° improves the simulations of extreme precipitation in Norway, especially in areas of orographic enhancement. However, a larger ensemble would be required in order to develop bias correction methods and analyse future projections of precipitation.