



Empirical-Statistical Downscaling and applications.

R.E. Benestad, T. Engen-Skaugen, I. Hanssen-Bauer

The Norwegian Meteorological Institute

We will present some studies where Empirical-Statistical Downscaling (ESD) has been used to provide input to impact studies. ESD was used in the project CELECT to compute future scenarios for heating degree days (HDD) and cooling degree days (CDD). We have also applied ESD to test whether it is possible to represent river run-off for a number of sites in Norway, as well as using ESD to make projections for regional climate series for Norway. The ESD has been carried out for large ensembles (~30) of Global Climate Models (CMIP3) for both the past (20CM3) and the future (SRES A1b), and we have used these scenarios to estimate climatologies for the periods 1995–2025 and 2010–2040, using the ensemble spread to estimate 5–95% confidence intervals and adjustment to ensure comparable mean values over times overlapping with observations (1995–2007). We have also applied ESD to temperatures in Russia for the IPY project EALAT, for which the results will be used in the context of studying future prospects for reindeer herding.