Downscaling of daily precipitation in the Baltic Sea catchment

F. Wetterhall (1), A. Bardossy (2), D. Chen (3), S. Halldin (1), C.-Y. Xu (1)
(1) Air and Water Science, Department of Earth Sciences, Uppsala University, Sweden, (2) Institut für Wasserbau, Stuttgart University, (3) Earth Sciences Centre, Gothenburg University, Sweden (fredrik.wetterhall@hyd.uu.se / Fax: +4618551124 / Phone: +46184712259)

A set of statistical downscaling methods and one dynamical downscaling method were evaluated in their ability to model seasonal precipitation patterns in Swedish catchments. The large-scale predictors included MSLP, geopotential heights at different pressures and relative humidity at the surface. The methods were trained on NCEP/NCAR reanalysis data on the time period 1961-2000, focusing on the importance of areal and temporal restrictions in the predictor data. The methods were then applied to 3 scenarios from 2 GCMs, the ECHAM4 and HadCM3 models. The scenarios were a control run (1961-1990), and two scenarios a2 and b2 (2071-2100).