Bias correction of monthly temperature and precipitation from regional climate model over Croatia – calibration and validation

Renata Sokol Jurković, Ivan Güttler, and Melita Perčec Tadić

Meteorological and hydrological service, Department for Climatological Research and Applied Climatology, Croatia (renata.sokol@cirus.dhz.hr)

Application of two bias correction methods on regional climate model data was examined. Temperature and precipitation were corrected. Mean monthly temperature and precipitation sum on spatial resolution of 1 km (CroMonthlyGrid) was used as observations. Quantile mapping is used to correct higher moments of a variable, thus transfer functions were developed for each variable separately for every grid point for the period 1971-1990 and applied to regional model data for the period 1991-2005. For the same period bivariate quantile mapping bias correction method with gamma for precipitation and Gaussian distribution for temperature and joint distribution was used to correct correlation between the two variables. Pearsons correlation coefficient was analyzed for row model data, observational data, univariate quantile mapping bias correction method and bivariate quantile mapping bias correction method and validation of the methods for the regional model was made.