



Comparative validation of statistical downscaling and regional climate models

R. Huth (1), J. Mikšovský (2), and P. Štěpánek (3)

(1) Institute of Atmospheric Physics, Dept. of Climatology, Prague, Czech Republic (huth@ufa.cas.cz, +420 2 72763745), (2) Dept. of Meteorology and Environment Protection, Charles University, Prague, Czech Republic (jiri.miksovsky@mff.cuni.cz, +420 2 21912533), (3) Czech Hydrometeorological Institute, Brno, Czech Republic (petr.stepanek@chmi.cz, +420 5 41421018)

Validation of climate models is an important task before their outputs are used e.g. in climate change impact studies. Although both statistical and dynamical downscaling methods have been validated thoroughly, comparisons of their performance are still rather scarce, especially for non-trivial statistical measures, other than bias or explained variance, whose correct reproduction may, nevertheless, be essential in specific applications and impact studies. In this contribution, we subject several statistical downscaling methods (both linear and non-linear) and outputs from high-resolution ($\tilde{10}$ km) regional climate models to the same validation procedures. The validation characteristics include temporal and spatial autocorrelations and higher-order statistical moments for daily temperature. The validation is conducted on a dense grid (with approximate resolution of 10 km) in central Europe.