



Comparing empirical downscaling methods within different kinds of terrain applied on the edge to climate impact research

Maja Zuvela-Aloise (1), Christoph Matulla (1), Inge Auer (1), Reinhard Böhm (1), Manfred J. Lexer (2), and Helfried Scheifinger (1)

(1) Zentralanstalt für Meteorologie und Geodynamik, Wien, Österreich (maja.zuvela-aloise@zamg.ac.at), (2) BOKU, Wien, Österreich

We use some statistical downscaling techniques to derive local scale scenarios of future daily and monthly temperature and precipitation for the Alpine region.

We utilize large scale NCEP/NCAR reanalysis data to establish empirical models and evaluate their performance against long term climate records from Austrian monitoring stations (forest sites, riverside fish population distributions, glaciers or phenological gardens across Europe etc.) for the second half of the 20th century.

The performance of different downscaling methods (multiple linear regression, canonical correlation analysis, the analog method) is analyzed. These methods are applied to derive transient climate change scenarios from ECHAM4/5 runs.

Downscaled data have been used in climate risk assessment studies to evaluate the sensitivity of the Austrian forests, fish stocks, phenological occurrence dates etc. to scenarios of climatic change.