



Bias corrected, high resolution climate scenarios for Austria

Barbara Chimani (1), Georg Heinrich (2), Stefan Kienberger (3), Armin Leuprecht (2), Michael Hofstätter (1), Annemarie Lexer (1), Markus Kerschbaumer (3), Manuela Salzmann (1), Marco Sebastian Poetsch (3), Raphael Spiekermann (3), Matthew Blaise Switanek (2), and Heimo Truhetz (2)

(1) Zentralanstalt für Meteorologie und Geodynamik, Klimaforschung, Wien, Austria (barbara.chimani@zamg.ac.at), (2) Wegener Center for climate und global change of the Karl-Franzens-University Graz, (3) Department of Geoinformatics – Z_GIS of the Paris Lodron University of Salzburg

The ongoing climate change does not only implicit the necessity of climate mitigation but also of climate change adaption. A new generation of climate models and emission scenarios offer an improved basis for discussion and planning of adaptation measures. Using this data Zentralanstalt für Meteorologie und Geodynamik (ZAMG), the Wegener Center for climate und global change of the Karl-Franzens-University Graz (WEGC) and the Department of Geoinformatics – Z_GIS of the Paris Lodron University of Salzburg are providing an analyses of past and future climate in Austria.

High resolution data (spatial resolution 1km, temporal resolution 1 day) are created from the new generation of European climate scenarios (EURO-Cordex, www.euro-dorcex.net, resolution 12.5km). Downscaling and bias correction is done with Scaled Distribution Mapping (Switanek et al., in preparation) using long- term observations and geo-statistically interpolated grids. This modern downscaling approach offers the possibility to include regional information into climate model output without changing the climate change signal. The scenarios used are RCP4.5 and RCP8.5, each with about 14 model runs. Climate change signals are calculated for the climate periods 2021-2050 and 2071-2100 including uncertainties given by the ensemble. For statements on regional scale spatial aggregation of the data is done.

The dataset includes the parameters temperature, precipitation and global radiation as well as climate indices derived from the meteorological parameters and will be provided by the Data Centre of the Climate Change Centre Austria (CCCA). It will be used to assess the necessity of adaption measures in different parts of Austria and will be a basis for future projects on the impact of climate change. This leads on one hand to minimizing the effort needed in each project to create the baseline dataset but on the other hand to an easier comparability of different studies as they use a common data basis.