Geophysical Research Abstracts
Vol. 12, EGU2010-11752, 2010
EGU General Assembly 2010

Reclip:century - a project conducting 21st century regional climate simulation runs focussing on the Greater Alpine Region

Wolfgang Loibl and the reclip:century Team
Austrian Institute of Technology (wolfgang.loibl@ait.ac.at)

Reclip:century (Research for Climate Protection: Century Model Runs) is a national climate simulation project aiming to deliver a range of climate simulations to provide scientifically sound data sets for the entire Greater Alpine Region, to be applied by the Austrian climate change impact research community.

The simulation runs are carried out by four Austrian institutions: the Austria Institute of Technology (AIT), Vienna, heading the project, the Institute of Meteorology of the BOKU-University, Vienna, the Wegener Center for Climate and Global Change at Graz University and the Central Institute for Meteorology and Geodynamics (ZAMG), Vienna.

The scenario results will demonstrate the range of climate evolution due to different greenhouse gas increase trends. The regional climate results conducted through dynamical downscaling of simulation runs from two General Circulation Model (GCM) simulation runs with two regional climate models (RCMs). A one-way double nesting approach is applied by the two RCMs COSMO CLM and MM5: the domain for the first nesting task is entire Europe and the surrounding areas with a spatial resolution of 30 to 50 km grid-spacing, depnding on the forcing data resolution. The second domain covers the Greater Alpine Region with a resolution of 0.09° or 10km grid-spacing. The GCMs, providing forcing data, are the German ECHAM5-MPI-OM (with approx. 100 km grid-spacing) and the UK HADCM3 (with approx. 200 km grid-spacing). Three IPCC - greenhouse gas scenarios (A1b, B2 and A2) for the time range 2000-2100 will be applied to compare the different greenhouse gas increase effects on regional climate. ERA40 reanalysis data for 1961-2000 GCM resolution will provide forcing for the hindcast model runs derived by the 2 RCMs. Observation data sets from HISTALP, CRU and Frei will be used to evaluate the hindcast simulations.

The simulation runs are currently in progress. The contribution presents outcomes from the initial project phase, discussing different parameterizations and domain settings to deliver best results for the alpine area with shortest computation time and describing test parameter settings and the achieved results to reduce the well-known cold bias as best as possible.