Geophysical Research Abstracts
Vol. 12, EGU2010-13336, 2010
EGU General Assembly 2010

High Resolution Regional Climate Modelling: Validation and Climate Change Signal in Radiation Parameters

Tomas Halenka and Michal Belda

Charles University in Prague, Fac. of Math. & Physics, Dept. of Meteorology and Environment Protection, Prague, Czech Republic (halenka@mbox.troja.mff.cuni.cz)

Project EC FP6 CECILIA – Central and Eastern Europe Climate Change Impact and Vulnerability Assessment is studying the impact of climate change on agriculture, forestry, hydrology and air-quality in complex terrain of the Central and Eastern Europe in high resolution. Resolution of regional climate simulation is an important factor affecting the accuracy of dynamical downscaling of the global changes. Especially the extremes are strongly dependent on the terrain patterns as shape of orography or land use, which can contribute to radiation interaction and thus to extreme temperatures appearance. Here the reliability of the RegCM in reproducing real climate is studied in the experiment with the perfect boundary condition driving in simulations for EC FP6 project CECILIA in 10 km resolution in terms of radiation parameters. The preliminary results of radiation data are analysed and compared to available observations on regional and local scale. The potential of this very high resolution reanalysis run to provide the basis for climatological estimates of spatial variability of radiative parameters in resolution higher than available from the radiation measurements at usually rather a few stations is studied as well. Climate change signal in radiative characteristics for periods 2021-2050 and 2071-2100 against control period of 1961-1990 is discussed.