



How well is annual cycle of temperature and precipitation in Europe reproduced in CMIP5, EuroCORDEX and ENSEMBLES ensembles

Tomas Halenka, Michal Belda, and Zuzana Klukova

Charles University in Prague, Fac. of Mathematics and Physics, Dept. of Atmospheric Physics, Prague, Czech Republic
(tomas.halenka@mff.cuni.cz)

The assessment of the ensemble of available EuroCORDEX simulations will be provided in terms of monthly mean analysis of surface temperature and precipitation monthly amount. Both ERA-Interim perfect boundary conditions simulations and historical runs driven by different GCMs from CMIP5 are validated against E-OBS data and compared for both available resolutions (0.11 and 0.44 deg.). The results are presented using the maps of model biases as well as in terms of the areal statistics for PRUDENCE regions, where former ENSEMBLES ensemble of regional simulations is used for comparison. GCMs results from CMIP5 are used for comparison as well. No significantly better results can be seen when comparing the results of 0.11 deg. resolution with respect to the 0.44 deg. Moreover, while both ensembles (basically all the members) are in very good agreement in annual cycle for temperature and very close to the reality, for precipitation quite significant disagreements appear for many of the simulations over some regions, in both ensembles, especially in terms of annual course. Surprisingly, the spread of precipitation annual cycle looks better for CMIP5 simulations at least in some regions. The analysis on the source of the biases is performed to clarify the reasons of such a behaviour.