



## **Regional climate modeling over areas characterized by complex terrain – precipitation and temperature change over the Carpathians**

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Several regional climate model (RCM) experiments have been accomplished over different sub-regions of the globe in the framework of the international initiative called the COordinated Regional Downscaling Experiment (CORDEX). Being the European branches of the CORDEX program: EURO-CORDEX and Med-CORDEX provide RCM ensembles targeting Europe (for Med-CORDEX: being the Mediterranean region in focus) at grid resolutions of  $0.44^\circ$  (medium resolution) and of  $0.11^\circ$  (high resolution). Evaluation of ensembles of driving GCM and nested RCM ( $0.44^\circ$  and  $0.11^\circ$ ) simulations for the late 20th and mid/late 21st centuries from the CMIP5, EURO-CORDEX, and MED-CORDEX experiments are presented at both resolutions, with a special focus on the Carpathian region. Present study is an extension of previous works done over the region of Alps, now including 8 RCM members. The results - in line with previous studies carried out for the region of the Alps - show that the fine-scale RCM downscaling can modulate the GCM-produced precipitation and temperature change signal in future climate projections associated within the region of interest. This and our previous findings thus point to the important role that high-resolution nested RCMs along with high elevations can play in the study of climate change signal over regions characterized by complex topography.