



## **Centennial-scale climate projection for the Carpathian Region assuming moderate change in the anthropogenic radiative forcing**

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Hungarian national climate and adaptation strategies have been recently revised, and a National Adaptation Geo-information System (NAGIS) is currently under development. This platform will serve as a central data collection for various end-users, impact researchers, and decision makers on national level in Hungary. In order to satisfy the demands for climate projection inputs within this framework, RegCM4.3 is one of the regional climate models used to provide results for detailed regional scale analysis and specific impact studies. RegCM is a 3-dimensional, sigma-coordinate, primitive equation model, originally developed by Giorgi et al. Currently, it is available from the ICTP (Abdus Salam International Centre for Theoretical Physics).

We aim to provide detailed regional scale climate projection information for the Carpathian Region and its vicinity. Therefore, 10 km horizontal resolution simulations focusing on the Carpathian Region are completed driven by our previous 50 km horizontal resolution experiment covering the larger Med-CORDEX area. After the detailed validation analysis, a continuous run has been completed for the 21st century assuming the RCP4.5 scenario. The corresponding CO<sub>2</sub> global mean concentration level by 2100 is estimated at 650 ppm, which can be considered a moderate increase of atmospheric CO<sub>2</sub> but still implies exceedance of the doubled preindustrial level. The presentation analyzes the temperature and precipitation outputs of the simulation, and the projected future changes on annual, seasonal, and monthly scales throughout the 21st century.