



## **Meteorological factors influencing characteristics of heat waves and cold spells over Central Europe in EURO-CORDEX RCMs**

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We evaluate the ability of current regional climate models (RCMs) to simulate temporal characteristics of heat waves and cold spells over Central Europe. We compare EURO-CORDEX RCMs driven by both global climate models and the ERA-INTERIM reanalysis against observations over the reference period 1980–2005. We focus on heat waves in summer and cold spells in winter over Central Europe (48.5–51.5 N and 12–18 E).

We find that some RCMs have difficulties to reproduce basic characteristics of heat waves and cold spells (such as frequency and duration). Most RCMs overestimate length of the longest heat waves and cold spells. We detected that models have a stronger tendency to cluster days of heat waves and cold spells in individual years compared to observations, which results in more extreme seasons in RCMs. We analyze climatological characteristics and meteorological factors related to the persistence of heat waves and cold spells, with focus on simulated atmospheric circulation and precipitation deficits.