Temporal autocorrelations simulated by the ALARO-Climate RCM

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The first outputs of the ALARO-Climate/CZ regional climate model (ALARO RCM) are analyzed. The ALARO RCM is being developed in the Czech Hydrometeorological Institute in Prague from the numerical weather prediction model ALARO, which is operationally run by several meteorological services in Europe. The goal is to run the ALARO RCM in a high resolution of about 5 km. Here we perform a validation of its coarser-resolution version with a gridstep of 25 km, driven by ERA-40 reanalyses for period 1961-2000. The validation is conducted against the E-OBS database. We concentrate on temporal autocorrelations, the correct simulation of which is important for prolonged extreme events, such as heat waves, cold spells, droughts, and floods to be well reproduced. The examined variables are daily extreme temperatures and precipitation. The autocorrelation coefficients with a lag from 1 to 5 days are estimated for each calendar month to eliminate biases associated with annual cycles. The differences of autororrelation in model and observed data are computed using jackknife technique and are shown for individual seasons.