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Evaluation of a WRF-hindcast ensemble within the EURO-CORDEX project.

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In the current work we present results of regional climate simulations performed with the WRF regional climate model over the EURO-CORDEX domain, for the time slice 1990-2008. Different parameterizations in microphysics, convection and radiation schemes are used in six hindcast simulations over the period 1990-2008. All hindcasts are forced by the ERA-interim reanalysis and have the same grid resolution (0.44). Results are evaluated against the E-OBS observational dataset for temperature and precipitation. All WRF configurations underestimate surface temperatures over the different European sub-regions for winter and summer. First results indicate that the Grell-Devenyi cumulus scheme is associated with a large cold bias in summer, which varies depending on the combination of the radiation and micro-physics schemes. Summer precipitation is more dependent on the selection of physical parameterizations and thus, it has greater variability than the winter precipitation, which is mostly sensitive to external forcing. The precipitation bias is larger in summer, ranging from 25-60 percent for different configurations. The final aim of this work is to identify specific WRF parameterizations potentially leading to systematic model bias and identify the related underlying processes.