



Accuracy of regional climate model monthly precipitation and temperature fields in the Mediterranean region.

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Regional climate models (RCMs) are expected to produce more accurate results than global climate models (GCMs), because of their higher resolution, which plays an important role in general, and particularly over regions with complex morphology such as the Mediterranean region. In this study we analyze the monthly temperature and precipitation fields of the RCMs used in the ENSEMBLES project that cover the whole Mediterranean region and compare them with the GCMs providing the initial and boundary conditions. Precisely the GCMs ECHAM5 and HADCM3Q0 have been compared to RegCM, HIRHAM, REMO, RACMO, RCA (driven by ECHAM5) and to PROMES, CLM, HadRMQ0, HIRHAM, RRCM (driven by HadCM3Q0). The CRU (Climate research Unit) monthly climatology (1961-1990) is used for model validation over land, ERSST (Extended Reconstruction Sea Surface Temperature) and NOCS precipitation (National Oceanographic Center Southampton) for validation over sea. Results show that RCM ensemble mean outperforms individual RCMs. With respect to GCMs, the RCM monthly climatologies match more closely CRU for temperature, but progress is not always present for precipitation. Model errors present large variability along the annual cycle.