Seasonal prediction for temperature anomalies in Romania using a statistical downscaling model applied to the ECMWF outputs

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Projection of the ECMWF seasonal predictions on the Romanian scale using a statistical downscaling model (SDM) developed for 94 Romanian stations is presented. The statistical downscaling model is based on CCA (canonical correlation analysis) developed for monthly mean temperatures for cold (November-April) and warm (May-October) seasons. The temperature at 850 mb (T850) is used as predictor. The NCEP reanalysis data set is used for model calibration and validation. The SDM is very skilful and stable in time. Various subintervals were used as independent data sets (1961-1980, 1981-2000 and 1991-2007) in order to analyse the SDM robustness. It was found that this model, calibrated over the period 1961-1990, it is capable to reproduce the monthly temperature variability over the period 1991-2007, including the extreme temperature anomalies (for example summer 2007).
The ECMWF seasonal predictions were used as inputs in the SDM in order to obtained high resolution season prediction on the Romanian scale. The comparison between the seasonal predictions derived directly from the ECMWF outputs and indirectly through the statistical downscaling model is presented, including the performance of the ECMWF to realistically predict the T850 anomalies. The use of the ENSEMBLES seasonal predictions as input in the SDM will be also explored