



Climate change scenarios for surface temperature and precipitation in Northern Italy obtained using statistical downscaling models

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Possible climate changes of seasonal maximum and minimum temperature and precipitation in N-Italy, over the period 2070-2100 against 1960-1990, are assessed. A statistical downscaling technique, applied to the ENSEMBLES experiments (control, A2 and B2 scenarios) are used to reach this objective. The method consists of a multivariate regression based on Canonical Correlation Analysis using as possible predictors mean sea level pressure geopotential height at 500hPa and temperature at 850 hPa. First, the statistical model is optimised and calibrated using ERA40 reanalysis to evaluate the large-scale predictors. The observational data at 50 stations uniformly distributed over northern Italy are used to compute the local predictands. The model ability to simulate the present day spatial and temporal variability of the chosen predictors is tested, using the control experiments. Finally, the downscaling model is applied so as to obtain simulated present day and A2 and B2 scenario results at local scale.