



Comparison of Dynamical and Statistical Downscaling Methods Applied to the ECMWF-System3 Global Seasonal Forecasts

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In this work we present a comparison of statistical and dynamical downscaling methods applied to global seasonal forecasts. To this aim we use the hindcast of the ECMWF System3 ensemble forecast system (41 members), and consider a period of 25 year with available boundary conditions for 11 members. The RCA-v3 model was applied in this period, obtaining surface temperature and precipitation forecasts at a resolution of 50 km over Spain. Moreover, analog-based statistical downscaling methods were applied to the 41 members using a 50 km grid of interpolated observations for temperature and precipitation over Spain (SpainHR grid), obtaining statistical forecasts in a grid suitable for comparison with the dynamical counterparts. We compare the direct model outputs with the regional predictions (both dynamical and statistical) using a simple and robust statistical test based on ROC skill Area (RSA), providing also bootstrap-based confidence intervals for the results. We also test the sensibility of the results to the size of the ensemble.