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A comparison of statistical downscaling techniques for the Iberian Peninsula temperature applied to seasonal multi-model ensemble integrations.

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SUMMARY

An assessment is made in order to quantify the operational predictability of temperature over the Iberian Peninsula. For this purpose, different statistical downscaling techniques based on Canonical Correlation Analysis and Analogs have been used to estimate a forecast of temperature in 55 observation sites evenly covering the Iberian Peninsula.

The multi-model ensemble system developed on the European project known as DEMETER has been considered to analyze the predictability of temperature over the Iberian Peninsula. The multi-model ensemble mean and the single models provide large scale information to be translated to the regional scale taking into account the connection between the North Atlantic sea level pressure and the temperature over Iberian Peninsula. The temperature estimated from the multi-model ensemble mean and single models using the downscaling techniques are contrasted in hindcast mode with station data by means of different statistical tests such as correlation and variance fraction skills.