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Predicting 2-m temperature with the CNR-ISAC subseasonal forecasting system

The CNR-ISAC monthly forecasting system is calibrated through a fixed reforecast dataset made up of 5-member ensembles initialized every 5 days over a 30-year period (1981-2010). In this work, this reforecast dataset, available on the S2S database, is used to assess the capability of the system to predict categorical probabilities of above- and below-normal 2-m temperature events. The prediction of 2-m temperature is of primary importance, being intrinsically related to human activities and closely connected to impacting phenomena as, for instance, heat waves and dry spells.

The analyzed probabilities are obtained using logistic regression and other MOS techniques and verified against ERA-Interim reanalysis in terms of probabilistic scores and reliability diagrams. The analysis is extended to extreme-percentile categorical events to evaluate the potential of the forecasting system to predict hazardous temperature anomalies on the subseasonal timescale.

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