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Verification of the CNR-ISAC sub-seasonal prediction system

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Since March 2014, the CNR-ISAC monthly forecasting system is run in real time and on weekly basis to provide sub-seasonal forecast to the Italian Civil Protection Agency. Since April 2015, the system has been updated to fit the requirements of the Subseasonal to Seasonal database, becoming one among the models currently participating to this WMO-sponsored project.
Results concerning the system performance during the last 2 years of operational activity are shown in terms of non-probabilistic and probabilistic scores. Verification is performed against the ERA-Interim reanalyses on a 1.5 x 1.5 lat-lon grid. Anomaly correlation coefficients and root mean square error (RMSE) of the 500-hPa geopotential height, 850-hPa and 2-m temperature, averaged on different forecast periods, as well as ranked probability skill scores for 2-m temperature anomalies, are computed on hemispheric and continental areas.
In terms of RMSE computed on weekly averages, the forecast ensemble mean outperforms climatology up to the second week and results nearly comparable on the third week. As expected, the non-probabilistic scores show that the predictive skill is favored in winter months on both the hemispheres. In the second year of the operational activity, the predictive skill has slightly increased, as compared to the previous year, mainly in the extended forecast range over Southern Hemisphere extratropics. However, further forecasts are needed to properly assess possible benefits of the model update.