EMS Annual Meeting Abstracts
Vol. 13, EMS2016-471-1, 2016
16th EMS / 11th ECAC

Sub-seasonal Sources of Predictability of Temperature and Wind Speed: the Role of Weather Regimes.

Nicola Cortesi, Veronica Torralba, Albert Soret, Llorenç Lledo, Pierre-Antoine Bretonniere, and Francisco Javier Doblas-Reyes

Barcelona Supercomputing Center, Barcelona, Spain

In recent years there has been a growing interest in the scientific, operational and applications communities in developing sub-seasonal forecasts that fill the gaps between medium-range weather forecasts (up to two weeks) and seasonal ones (2-6 months).

Weather Regimes are frequently employed to understand the relationships between large-scale pressure fields and surface variables such as 2-m temperature or 10-m wind speed. The same relationships could be used to improve the sub-seasonal forecasts, provided that the forecast systems are able to correctly reproduce the observed circulation patterns.

The aim of this study is to assess the skill of the ECMWF Monthly forecast system to simulate the observed four North Atlantic Weather Regimes derived from the daily mean sea level pressure fields from the ERA-Interim and the JRA-55 datasets (1994-2013).

Furthermore, the impact of Weather Regimes on 2-m temperature and 10-m wind speed is evaluated, both for the two reanalysis dataset and for the monthly forecast system. The comparison of the differences between observed and simulated Weather Regimes circulation patterns and impact charts provides useful information on the role of the Weather Regimes as source of predictability of temperature and wind speed.