



Sensitivity of fall seasonal forecasts over Western Europe to atmospheric resolution and physics.

Jean-François Guérémy (1), Nabil Laanaia (1), and Jean-Pierre Céron (2)

(1) Météo-France, CNRM, Toulouse, France (jean-francois.gueremy@meteo.fr), (2) Météo-France, Direction de la Climatologie, Toulouse, France (jean-pierre.ceron@meteo.fr)

The aim of this work is to illustrate the impact of both atmospheric resolution and physics on fall Seasonal Forecasts (SF) over Western Europe. Three sets of SF are considered: ENSEMBLES (ECMWF (EC) and Météo-France (MF) dataset), New Physics High Resolution (NPHR, 125 km) and New Physics Low Resolution (NPLR, 312 km). The NP package used in this study includes a prognostic turbulent kinetic energy turbulence scheme (Cuxart et al., 2000) and a CAPE relaxation convection scheme (Guérémy, 2005). The behavior of the MF model using this NP package (versus the standard package) is first presented with a 1D case-study simulation and multi-year global coupled simulations, pointing out systematic errors. Second, correlations are shown in order to assess the predictability. Finally, composites of several fields are discussed to get an insight on the ability of the models to reproduce teleconnections between the tropics and Western Europe; two sets of composites are defined considering first the years of maximum normalised anomaly of the 850 hPa temperature over Western Europe and second the years of maximum occurrence of high precipitating events along the French Mediterranean coast.