Local seasonal forecasts over France: what can we expect from statistical downscaling ? Results with the DEMETER and ENSEMBLES systems

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The management of the power generation system at the scale of a country is a very complex problem which involves in particular climatic variables at different spatial and time scales. Air temperature and precipitation are among the most important ones, as they explain respectively an important part of the demand variability and the hydro power production capacity. Direct GCMs forecasts of local variables are not very skilful, especially over mid-latitudes. Downscaling of large scale fields at upper levels to station points might be an efficient way to improve seasonal forecasts for application models.

In this study, we evaluated the 2m temperature and precipitations hindcasts of the DEMETER and ENSEMBLES systems on a number of stations in France. We used the University of Cantabria
ś web portal for statistical downscaling to downscale the most predictable large scale fields, and compared direct raw hindcasts with indirect downscaled hindcasts. The portal also allowed to test different large scale predictors and different downscaling methods, in order to optimize the process.