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The Météo-France contribution to the ERA4CS-MEDSCOPE project: plans and preliminary results

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The MEDSCOPE project, part of the JPI-ERA4CS initiative, aims to develop seasonal-to-decadal prediction capacity and develop tailored climate services in specific sectors (energy, agriculture and hydrology) over the Mediterranean region. Building on past works in several collaborative research projects such as FP7-SPECS and FP7-EUPORIAS, Météo-France will contribute to key aspects of MEDSCOPE. The aim of this presentation is to provide an overview of this contribution and present first results in the scope of the project which started in September 2017.

The CNRM-CM6-1 GCM developed for CMIP6 is used in both initialized seasonal retrospective ensemble forecasts over a 22-year period, and targeted sensitivity experiments to further understand how the model represents links between Mediterranean climate at a seasonal-to-multiannual time scale and possible sources of local or remote influence such as the land surface (soil moisture, snow cover) and the ocean (ENSO and PDO).

After showing preliminary skill evaluations over the region of interest with both CNRM-CM6-1 and the operational Météo-France seasonal forecasting System 6 developed for Copernicus-C3S, we will discuss how coarse-resolution GCM forecast data can be bias-corrected and adjusted to finer spatial and time scales. The ADAMONT method (Verfaillie et al. 2017), originally developed to adjust regional climate projections, will be used to downscale and bias-correct seasonal re-forecast data. The method combines quantile-quantile calibration with a weather regime approach to correct model outputs and generate sub-daily time series needed for impact models. The adjusted seasonal forecast data will then feed the SURFEX-TRIP model to provide relevant indicators for energy, agriculture and hydrology applications.