

## **SESSION: (B5) Hindcast and forecast quality assessment**

### **(B5-02)**

#### **Robust evaluation of seasonal forecast quality using teleconnections**

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In response to the high demand for more reliable climate information at the seasonal timescale, innovative climate prediction systems are developed with improved physics and increased spatial resolution. Alongside the model development process, seasonal predictions need to be evaluated on past years to provide robust information on the forecast performance. This work presents the quality assessment of an intermediate version of the Météo-France coupled climate prediction system based on CNRM-CM. In order to have a robust evaluation, the experiment is performed with 90 ensemble members over a 37-year re-forecast period from 1979 to 2015. We focus on the boreal winter season (December to February) initialised in November. Beyond typical skill measures we evaluate the model capability in reproducing ENSO and NAO teleconnections with precipitation and near surface temperature respectively. Such an assessment is carried out first through a composite analysis, and shows that the model succeeds in reproducing the main patterns for near surface temperature and precipitation. A covariance method leads to consistent results. Finally we find that shortening to 23 years the verification period and reducing to 30 members the ensemble size does not impact the representation of teleconnections in the model re-forecasts. In a second stage of the study, two different versions of the model used in the operational seasonal forecasting systems 5 and 6 at Météo-France are shown and compared, using experiments that follow the operational standards (30 members, 24 year verification period).