



Evaluation of a new CNRM-CM6 model version for seasonal climate predictions

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This work presents the quality assessment of a new version of the Météo-France coupled climate prediction system, which has been developed in the EU COPERNICUS Climate Change Services framework to carry out seasonal forecast. The system is based on the CNRM-CM6 model, with Arpege-Surfex 6.2.2 as atmosphere/land component and Nemo 3.2 as ocean component, which has directly embedded the sea-ice component Gelato 6.0. In order to have a robust diagnostic, the experiment is composed by 60 ensemble members generated with stochastic dynamic perturbations. The experiment has been performed over a 37-year re-forecast period from 1979 to 2015, with two start dates per year, respectively in May 1st and November 1st. The evaluation of the predictive skill of the model is shown under two perspectives: on the one hand, the ability of the model to faithfully respond to positive or negative ENSO, NAO and QBO events, independently of the predictability of these events. Such assessment is carried out through a composite analysis, and shows that the model succeeds in reproducing the main patterns for 2-meter temperature, precipitation and geopotential height at 500 hPa during the winter season. On the other hand, the model predictive skill of the same events (positive and negative ENSO, NAO and QBO) is evaluated.