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The prediction of sea surface temperature in the North Atlantic in the seasonal prediction system based on the MPI-ESM coupled climate model

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We present results from the seasonal forecast system based on the global coupled climate model MPI-ESM as used for CMIP5 simulations. We describe the initialisation of the system and analyse its predictive skill for surface temperature. The presented system is initialised in the atmospheric, oceanic, and sea ice component of the model from reanalysis/observations with full field nudging in all three components. For the initialisation of the ensemble, bred vectors with a vertically varying norm are implemented in the ocean component to generate initial perturbations. In a set of ensemble hindcast simulations, starting each February, May, August and November between 1982 and 2010, we analyse the predictive skill. Bias-corrected ensemble hindcasts for each start date reproduce the observed surface temperature anomalies at 2-4 months lead time over many regions, particularly in the tropics, but also over the ocean. Here, we focus on the analysis of the North Atlantic sea surface temperatures, and in particular the hindcast skill of sea surface temperatures related to the state of the North Atlantic Oscillation.