



Decadal prediction of the Sahelian precipitation in CMIP5 simulations

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In this study the capability of eight state-of-the-art ocean-atmosphere coupled models in predicting the monsoonal precipitation in the Sahel on a decadal time scale is assessed. In order to estimate the importance of the initialization, the predictive skills of two different CMIP5 experiments are compared, a set of ten decadal hindcasts initialized every 5 years in the period 1961-2009, and the historical simulations in the period 1961-2005. Results indicate that predictive skills are highly model dependent: CanCM4, CNRM-CM5, and MPI-ESM-LR models show improved skill in the decadal hindcasts, while MIROC5 model is skillful both in the decadal and historical experiments. BCC-CSM1-1, HadCM3, IPSL-CM5A-LR and MRI-CGCM3 models show insignificant or no skills in predicting the Sahelian precipitation. Skillful predictions are produced by models properly describing the SST multi-decadal variability and the initialization appears to play an important role in this respect.