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Decadal prediction for the Arctic

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The EC-EARTH model was applied in decadal prediction experiments within the CMIP5 framework. A 7-member ensemble of 10-yr simulations was started every year in the period 1960-2005. The evaluation in this work focuses on the period 1980-2010 due to the restricted availability of sea-ice observations. We investigate the outcome of the decadal predictions for sea-ice volume and extent in the Arctic, as well as temperature and precipitation in the entire Arctic and selected sub-domains. The skills of the decadal predictions are compared against climatology and persistence. The first results indicate that the ensemble mean shows better skills than individual ensemble members. Decadal predictions are found to be more skillfull than persistence but not significantly different from climatology. The skill of the decadal prediction depend on season, region and we also find differences between different variables. We also investigate the sensitivity of the findings to undersampling if the statistics are evaluated only for every 5th startyear as it was done in the core experiments for CMIP5.