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Predictability of the PDO in MPI-ESM on decadal timescales

K. Pankatz, K. Fröhlich, and B. Früh Deutscher Wetterdienst, Offenbach, Germany (klaus.pankatz@dwd.de)

As a part of the Miklip (Mittelfristige Klimaprognosen) project funded by the Federal Ministry of Education and Research (BMBF) a re-forecast ensemble was simulated by the MPI-ESM-LR model (version mpiesm-1.2.00p4) to assess the skill of decadal predictions. This re-forecast suite complements the MPI-ESM-HR simulations done by our project partners.

The skill of these two forecast suites is compared. Special attention is directed to the prediction of the pacific decadal oscillation (PDO) in decadal forecasts, represented by the PDO-Index. Meehl et al. (2016) found a strong correlation between PDO-Index and the global temperature trend. This should, in theory, lead to potential predictability if the PDO-Index is successfully modeled. The model has proven to represent the variability of the PDO quite well. At the end of the decade the ensemble mean predicts a change towards a negative PDO phase.