

Decadal hindcast and forecast experiments by FGOALS_g1

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In terms of the experiment schemes designed for the CMIP5, we used FGOALS_g1 to conduct a series decadal hindcast and forecast experiments. FGOALS_g1 is a low-resolution version of the coupled general circulation model developed by the Institute of Atmospheric Physics in China. An Incremental Analysis Updates (IAU) technique is used in the key steps of the initialization of oceanic state. Pacific decadal oscillation (PDO) simulated in the hindcasted experiments is compared with the observational or reanalysis data. In the observation, the spatial structure of PDO presents a dipole SST anomalies pattern between Kuroshio-Oyashio extension (KOE) and eastern North Pacific. The hindcast experiment has some skill in reproducing the oscillation of the SSTA in the eastern pole but have no skill in KOE region. Analysis indicates that the discrepancy may be caused by the mutual interference between the signals of initial conditions and model internal variability.