

Experimental seasonal climate prediction using CFES: Comparison with the SINTEX-F systems

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An experimental seasonal climate prediction system has been developed based on the Coupled atmosphere-ocean general circulation model for the Earth Simulator (CFES). Following the well-established systems based on the SINTEX-F model, initial conditions for seasonal climate prediction are constructed by strongly nudging sea surface temperature (SST) to observed one.

At this stage, 12-member ensemble 6-month predictions from the 1st day of March, June, September, and December have been conducted from 1983 through 2018, after 32-years of coupled spin-up integration with SST-nudging to the observed climatology. The experimental system exhibits skill in predicting variability of seasonal-mean 2-m air temperature over the tropical Pacific, and contributes to the improvement of multi-model ensemble prediction with the SINTEX-F systems.

Keywords: experimental seasonal climate prediction, global coupled atmosphere-ocean GCM, atmosphere-ocean interaction, multi-model ensemble