

Evaluation of the short-term climate variability in GEOS-5 AOGCM simulations

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The GEOS-5 Atmosphere-Ocean General Circulation Model (AOGCM) has been developed for subseasonal-to-decadal climate prediction studies. Its main components are the GEOS-5 atmospheric model, the catchment land surface model, and MOM4. The ocean and atmosphere exchange fluxes of momentum, heat and fresh water through a "skin layer" interface that includes parameterization of the diurnal cycle and a sea ice model (LANL CICE). All components are coupled together using the Earth System Modeling Framework (ESMF) interface. The model has been tested in coupled simulations and data assimilation mode and is able to produce stable, realistic mean climate and inter-annual climate variability. An ensemble of decadal prediction runs have been undertaken following the experimental suite specified for CMIP5. We will present an evaluation of the model climate simulations as a guide assessing results of our decadal prediction experiments. The atmospheric climate performance will be compared with that from AMIP simulations to isolate coupling issues.