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Title: Climate Mean, Varibility and Predictability during Wintertime in the NCEP CFSv2 AMIP simulation
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Abstract:
In this work, climate mean, variability, and potential source of predictability during wintertime in 200-mb height is analyzed using a set of 18 members AMIP simulation from the NCEP CFSv2 and compared with NCEP/NCAR reanalysis. The AMIP simulation started with different initial conditions from 1st January 1957 and proceeded to the April 2013, and all the 18 members were forced with the observed varying SSTs, sea-ice concentration and CO2 concentration. The runs are updated on monthly basis (near real-time) to provide seasonal attribution activity at CPC.
The model has a cold bias almost over most of the globe, and only warm bias is seen concentrated in small area West of Date line between 30S-60S latitudinal belt. The bias in stationary waves is characterized with wave trains emanating from the tropical region into both the hemispheres, which could be related to bias in the precipitation over the tropical Maritime continent and over the southern Indian Ocean.
The model successfully simulated the seasonal mean variability in terms of geographical locations of the major centers of action, but the simulated intensity was generally weaker than that in observation, particularly over the Greenland area. The simulated ENSO teleconnection pattern from model resembles well that from the observation, except for a small eastward shift. Overall, the NCEP CFSv2gaea is capable of simulating major features of global winter seasonal mean circulation with good fidelity.

The model dependence of the signal (variance of ensemble mean) and noise (variance about the ensemble mean) is large. The signal-to-noise ratio is significantly greater than unity in the Tropics, the northern Pacific and continental North America subtropics and the southern Pacific subtropics.

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