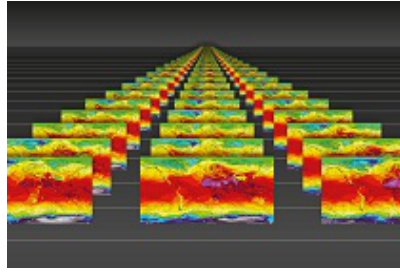


Workshop on Predictability, dynamics and applications research using the TIGGE and S2S ensembles



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Performance of the Sub-seasonal Forecasting of the Asian Summer Monsoon by BCC-CSM1.2

A sub-seasonal to seasonal forecast system has been developed using the medium resolution version of the Beijing Climate Center Climate System Model (BCC-CSM1.2). Based on the retrospective forecasts of 60-day integrations by the model initiated from every 00,06,12,18 UTC cycle from 1994-2013, a comprehensive assessment of the prediction skill in global atmospheric circulations, especially the Asian monsoon, has been conducted.

Main results are listed as follows: (1) Although with apparent biases, the climatological features of Asian monsoon can be reasonably predicted. As compared to the observations, the interannual variations of dynamical monsoon indices for the East Asian summer monsoon and the western North Pacific summer monsoon are well reproduced, but that for the Indian summer monsoon is relatively poorly captured. (2) The prediction skill of precipitation and surface air temperature show obvious regional differences. Higher anomaly correlation coefficients (ACCs) within 25-day lead time appear over tropical regions and extratropical regions of the northern hemisphere, compared to that over East Asia, where a low and quickly dropping skill with lead time is often found. (3) The model can more skillfully capture the spatial variability of Asian monsoon in El Nino/La Nina years than in other normal years. (4) Case studies indicate that, to some extent, the model is capable of predicting the evolution processes of some persistent heavy rainfall events 10 lead days in advance.

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