



## **Seasonal Drought Predictability and Forecast Skill over China**

Feng Ma and Xing Yuan

Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, China (yuanxing@tea.ac.cn)

With global warming and land use changes, seasonal drought events occur more intensely and frequently. However, the understanding of drought mechanism and predictability is limited. Based on the hindcasts from multiple ocean-atmosphere coupled general circulations models (CGCMs) participating in the North American Multi-Model Ensemble (NMME) project, this paper investigates the potential predictability and forecast skill of seasonal droughts over China. A 3-month standardized precipitation index (SPI3) is used as the drought index, and the anomaly correlation (AC) of the ensemble mean of an individual model against the observed SPI3 values are used as measures of forecast skill. Predictability is calculated by verifying a single member against its ensemble mean, i.e. how well does the model predict itself. Preliminary results indicate that drought predictability is higher than forecast skill, suggesting there is room for improving the drought forecast. There are positive correlations between potential predictability and actual forecast skill, i.e. the models with higher potential predictability also have higher forecast skill. Such relationship holds for different seasons too. For the ENSO-affected river basins in China, both the drought predictability and forecast skill are higher in ENSO years than neutral years, which is consistent with the predictability and forecast skill of ENSO SST.