



Interannual variability of Winter Precipitation in Southeast China

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The observed winter (DJF) precipitation in Southeast China (1961-2010) is characterized by a monopole pattern of the three-monthly Standardized Precipitation Index (SPI-3) whose interannual variability is related to the anomalies of East Asian Winter Monsoon (EAWM) systems. Dynamic composites and linear regression analysis indicate that the intensity of EAWM and Siberia High (SH), the position of East Asian Trough (EAT), El Niño events and SST anomalies over South China Sea (SCS) influence different regions of anomalous Southeast China winter precipitation on interannual scales. The circulation indices (EAWM, SH and EAT) mainly affect the winter precipitation in the eastern part of Southeast China. El Niño events affect the South China winter precipitation due to the anticyclone anomalies over Philippines. The effect of SCS SST anomalies on the winter precipitation is mainly in the south part of Yangtze River. And the contributions from all the impact factors do not counteract with one another to generate the Southeast China winter precipitation variability. Thus, a set of circulation regimes, represented by a handful indices, provide the basis for modeling precipitation anomalies or extremes in future climate projections.