EMS Annual Meeting Abstracts
Vol. 14, EMS2017-68, 2017
© Author(s) 2017. CC Attribution 3.0 License.

Structure and Evolution Characteristics of Atmospheric Intraseasonal Oscillation and its Impact on the Summer Rainfall over the Yangtze River Basin in 1998

Yanjun Qi
Chinese Academy of Meteorological Sciences, Beijing, China (qyj198836@sina.com)

The spatial and temporal structures of intraseasonal oscillation (ISO) associated with the flood during 1998 summer over the middle–lower reaches of the Yangtze River basin (YRB) in eastern China are investigated using gauge-based daily precipitation analysis data and NCEP/NCAR (National Centers for Environmental Prediction/National Center for Atmospheric Research) reanalysis data. It is found that summer rainfall over the YRB exhibits marked ISO activities in 1998. Based on phase-composite analysis, the alternating cyclonic–anticyclonic circulation pattern propagates northwestward from the western North Pacific.A maximum rainfall anomaly occurs over the YRB when an anomalous low-level cyclone appears in situ. An anticyclonic circulation anomaly, with pronounced southwesterlies, appears to the south of the YRB. The vertical motion and specific humidity anomalies associated with ISO exhibit notable northward propagation from the tropics all the way to the latitude of the Yangtze River during the summer of 1998. The enhanced upward motion, low-level vorticity and moisture favor strong precipitation over the YRB.