



Subseasonal characteristics of diurnal variation in summer monsoon rainfall over central eastern China

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Subseasonal characteristics of the diurnal variation of the summer monsoon rainfall over central eastern China (110°-120°E, 25°-40°N) are analyzed using hourly station rain gauge data. Results show that the rainfall in the monsoon rain belt is dominated by the long-duration rainfall events (≥ 7 hours) with early morning peaks. The long-duration rainfall events and early morning diurnal peaks experience subseasonal movement which is similar to that of the monsoon rain belt. When the monsoon rainfall is separated into the active and break periods, the long-duration early morning precipitation dominates the active period, which is in sharp contrast to the short-duration (≤ 6 hours) rainfall with leading late afternoon diurnal peaks during the break period. The combination of different diurnal features of monsoon rainfall in the active and break monsoon periods also explains the less coherent diurnal phases of summer mean rainfall over central eastern China. The cause of the early morning peak of rainfall during the active monsoon period is discussed.