Baiu is a Japanese name that indicates the rainfall or rainy season of the early summer in the western North Pacific (WNP). This work examines the variability of the Baiu, in particular the onset and closing dates near Japan. The location of the Baiu front is determined by the minimum of the meridional gradient of equivalent potential temperature, which identifies the zonal boundary of air masses. The onset and closing dates of the Baiu season are then defined by the northward movement of the Baiu front in the WNP.

We estimated a mean onset date of June 2, which is comparable to the date published by the Japan Meteorological Agency (JMA). However, the correlation between the two variations is insignificant for onset. The meridional shift of the monsoon southwesterlies controls the early or late onset dates. Our mean closing date of July 21 is about 1 week earlier than the JMA date, but the correlation is significant between these two variations. The closing dates are modified through both the anomalous mid-latitude westerlies and the large-scale circulation anomalies associated with the WNP summer monsoon. Because the balance of tropical and polar air masses determines the northward excursion of the Baiu front, both tropical and mid-latitude circulations modulate the onset and closing dates. We confirmed that the correlations between the variations of these dates and the ENSO or tropospheric biennial oscillation of the Asian monsoon are weak, even though the interannual variations of these dates are dominated by 2–4-year periods.