

The withdrawal of the Baiu associated with mid-latitude disturbances

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The withdrawal of the Baiu is a seasonal transition from rainy season to hot summer. The sudden seasonal change is more rapid than others. Generally, in this stage, a high pressure anomaly with equivalent-barotropic structure appears over Japan, the westerly jet moves northward and the Baiu frontal zone vanishes.

In this study, high pressure anomalies that caused the withdrawals of the Baiu were picked up in 27 cases from 1980 to 2003 and analysed its formation processes using NCEP/NCAR reanalysis data and GMS IR images. The dates of the withdrawal in each cases were referred to the declaration of Japan Meteorological Agency.

The results show that stationary (or low-frequency) Rossby waves activate high pressure anomalies in 16 cases. In these cases, some waves propagate along the westerly jets and others in the region of north Eurasian continent. Several withdrawals are associated with moving disturbances. Cut-off lows over the continent move eastward and act as sources of the high pressure anomalies over Japan in three cases. And moving ridges over the continent come to Japan in three cases. No clear relationship with a mid-latitude disturbance is seen in other five cases.

In almost all the cases, high pressure anomalies are located over Japan at the end of the Baiu season, however, five cases are associated with high pressure anomalies located the north of Japan around 50N, that move the westerly jet northward.