

## The climatic characteristics of summer convections over the Tibetan Plateau and surrounding regions revealed by geostationary satellite

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Based on the infrared TBB from 2010 to 2014 of the geostationary meteorological satellite FY-2E, the climatic characteristics of summer convection over the Tibetan Plateau and its surrounding areas are analyzed. The analysis shows that in May, the main convection occurred in the eastern edge of the Tibetan Plateau, and then with the Asian summer monsoon, the strongest convection (severe convection) occurs in the southeast part of the plateau part in June. In late summer, the strong southwest wind brought abundant moisture to the eastern and central area of the plateau through the topographic gap and forms a belt of convection there. In the western part of the plateau, area with convection frequency greater than 6% reaches the southern plateau at about 37th pentad, and gradually moves northward until the end of July. In the middle part of the plateau, convection (severe convection) becomes active since the early (mid) June, and maintain the whole late summer with three northward movements until reaching 34°N. Convections in the eastern part of the Tibetan Plateau is relatively active since the beginning of May and the northward stretching time is slightly later than that over the central part of the plateau. Two high intra-seasonal variability centers are located in the middle branch of the Brahmaputra and the southeastern part of the plateau. Summer convective activities are very uneven in these regions and prone to drought and flood disasters. The first leading mode of the convection frequency is the reverse mode over the Indian monsoon region and the southeastern part of the plateau while the second leading mode reflects the variation over the western part of the plateau [U+FF0C] the India continent west of 80°E and the South Asian continent east of 80°E.