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Different types of El niño events and their influence on summer precipitation in china

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El Niño events typically begin in the spring and summer[U+FF0C] different types El Niño events, can have different influence on the atmospheric circulation over East Asia[U+FF0C]and even the precipitation in China, in the developing and decaying years in Summer.
Therefore[U+FF0C]the anomalies of summer rainfall in China and atmospheric circulation over East Asia in the developing and decaying years of SP and SU pattern El Niño events were compared[U+FF0C]in order to improve the understanding of the relationship between El Niño events and climate anomalies in China[U+FF0C]as well as to provide a reference for climate prediction[U+FF0E]Specifically speaking[U+FF0C]the percentage of precipitation anomaly in China[U+FF0C]850hPa wind anomaly, 500hPa water vapor flux anomaly[U+FF0C]anomaly of water vapor flux divergence[U+FF0C]geopotential height anomaly[U+FF0C]velocity potential anomaly[U+FF0C]divergent wind anomaly at 850hPa and 200hPa in the developing and decaying years of different pattern El Niño events were analyzed[U+FF0C]by means of the monthly mean precipitation data of 160 meteorological observation stations in China from the National Climate Center of China Meteorological Administration[U+FF0C]monthly mean geopotential height[U+FF0C]wind[U+FF0C]specific humidity and surface pressure from the American National Centers for Environmental Prediction[U+FF0C]and the Niño3.4 index data from the American Climate Prediction Center[U+FF0E]
The results are as follows[U+FF0E]1)In the SP type El Niño events developing years, most parts of China with little rain, showed a "northern rainy but Southern little rain" form in decaying years; in the SU type El Niño events developing years, the precipitation anomaly was a sandwich type distribution, and the area with more precipitation was increased in decaying years.2)At 850hPa wind field, in the SP type El Niño events developing years, summer monsoon was slightly strong, summer monsoon also remained strong in decaying years; and in the SU type El Niño events developing years, East Asian summer monsoon was weak, summer monsoon was strong in decaying years.3)At the 500hPa height field, in the SP type El Niño events developing years, the influence of the East Asian summer monsoon on China was weak, and the warm and moist water from the low latitude region is insufficient to transport to the mainland of China, in decaying years, affected by the strong summer monsoon, the warm and moist water from the low latitude region was transported to the hinterland of China. And in the SU type El Niño events developing years, affected by the relatively active cold air, Inner Mongolia and North China with more precipitation; in decaying years, affected by the strong summer monsoon, cold and warm air met in the north of the Yellow River.4)Comparisons between lower and upper level indicated showed that: in the SU type El Niño events developing years, over China, except for Inner Mongolia and Northeast China, was sinking anomaly; in decaying years, was rising anomaly. In the SU type El Niño events developing years, there was a significant subsidence anomaly over China, in decaying years, there was a weak subsidence anomaly over China, but under the influence of strong summer monsoon, the area with more precipitation was increased.