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Title: CLIMATIC FEATURES OF RAINFALL IN RAINY SEASON IN THE AREA SOUTH TO YANGTZE RIVER AND ITS RELATIONSHIP WITH SSTA

Abstract: CLIMATIC FEATURES OF RAINFALL IN RAINY SEASON IN THE AREA SOUTH TO YANGTZE RIVER AND ITS RELATIONSHIP WITH SSTA WANG Qianqian, CHEN Shaodong (Department of Atmospheric Sciences, Nanjing Institute of Meteorology, Nanjing 210044) ABSTRACT Jiangnan (JN) is an area in the east China, south to the Yangtze River and North to the Nanling Mountain, including south parts of Hunan, Zhejiang and Jiangxi Provinces, and the most of Fujian province. The economics in the area is well developed, the population is large, but the spring and summer floods are often. Due to the special geographical location this area has never been taken as an independent one for climatic studies. Its climatic features such as precipitation and temperature are mentioned only in the studies on climatic properties of the Yangtze River basin or the South China and the concerned time is summer. However, as pointed by Chen[1], generally speaking, the rainy season in the JN starts from the first dekad of April and ends in the last dekad of June. Therefore, this paper studies the basic climatic properties of precipitation in the rainy season of JN in April to June and its relationship with the SSTA. At first, the illegibility clustering and the correlation techniques are used for selection of the representative rainfall stations in JN, then the seasonal, interannual and interdecadal variations of the precipitation in the JN rainy season are analyzed in detail in order to depict its basic temporal and spatial distributive patterns. The key ocean area in which the SSTA is important for the JN precipitation and the key period when the SSTA has the most impact are both found. At last, by use of synthesis method, the abnormal features of atmospheric circulation in the following years of the warmer and the cooler SST years are discussed in order to primarily expose the mechanisms of the SSTA influencing the JN rainfall anomalies. Results of the paper show that the earliest beginning of the JN rainfall season starts in March; the period of April to June is the time of concentration of precipitation. The JN is the area with the earliest beginning of rainy season and, at the same time, the earliest ending in whole China. The precipitation has a trend to decrease slightly in the past 50 years. The key SSTA area impacting the anomaly of the JN rainfall is located in the 9°S - 1°S, 121°E - 129°E of the Southern Hemisphere, and the key period in which the SSTA has the largest impact on the JN rainfall is May to July in the previous year. The mechanisms may be that the long time interaction between the air and the sea results in the later changes of the atmospheric circulation due to the former anomalies of the SSTA and therefore results in the precipitation anomalies in the JN area in the same coming year.

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