

Possible factors affecting interannual variability of spring rainfall over southeastern

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We examined the possible impacting factors controlling interannual variability (IAV) of the spring rainfall (SPR) over southeastern China using the NCEP-NCAR reanalysis data and APHRODITE precipitation data from 1951 to 2007. The SPR amount accounts for about 35-40% in the annual rainfall amount over southeastern China. Therefore, the IAV of SPR is important as well as the IAV of summer monsoon rainfall. The IAV of SPR is dependent on the moist southwesterly over southwestern China at the lower troposphere. This southwesterly is mainly induced by the east-west gradient between the western pacific and the Indochina peninsula. As a result of correlation analysis, the IAV of SPR is associated with the El Nino-Southern Oscillation (ENSO) via the variability of the western Pacific subtropical high. However, we found the clear difference in the ENSO effect on the IAV at different stage of SPR. Based on the correlation analysis using the 10-day mean precipitation over eastern China and Southern Oscillation Index (SOI), we separate in to two periods; the first part (Feb. 10 to Mar. 20) and the second part (Apr. 1 to May. 10) on the SPR period. This correlation analysis denotes the significant negative correlation during first part and the nearly no correlation in second part. Thus, the mechanisms for the modulating the east-west gradient are different between first part and second part in the SPR period.

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