

## **Impact of the inhomogeneous characteristics of temperature variation on the extreme precipitation events**

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Global temperature variations have inhomogeneous characteristics, and the temperature gradient in land is larger than that is in ocean. The results show that the longitudinal and latitudinal temperature gradients have significant interdecadal characteristic, and its abrupt climate change occurring in 1980. The significant inhomogeneous is over the boundary of land and ocean, and the eastern China is one of key areas of the longitudinal and latitudinal temperature gradient which according to the abnormality of the extreme precipitation events. When the more extreme precipitation amount and number of days, latitudinal temperature gradient over eastern China is larger, and the longitudinal temperature gradient over the South China Sea is smaller. When the interannual variability over the western Pacific Ocean is larger, and the interannual variability over the continent and eastern Pacific Ocean are smaller, the extreme precipitation events over the Yangtze-huaihe River Basin increase.