



The Interdecadal Variability of Summer Precipitation over the South of China and its Response to Asian Monsoon at the Turning Points of Global Warming

Huan Wang (1) and Dongliang Li (2)

(1) Nanjing University of Information Science and Technology, Nanjing, China (wangh.11s@igsrr.ac.cn), (2) Nanjing University of Information Science and Technology, Nanjing, China (lidl@nuist.edu.cn)

Under the background of global warming, decadal variability of the summer precipitation in the South of China and the Asian monsoon experienced mutations at around the end of 1970s, the beginning of 1990s and 21st century. We examined the external and internal forcings which may cause the mutations and diagnosed the mechanism. Human emission of CO₂ has always been the fatal reason for global warming, and it is also the primary reason for the precipitation increasing over Yangtze-Huai river basin at the end of the 1970s. The Yangtze-Huai river basin and South China demonstrated more summer rainfall after 1993. This can be explained by the weakening of the Asian summer monsoon caused by the positive anomaly of summer SST over northwest Pacific Ocean and Indian Ocean. A significant trend in the enhancement of sensible heat over the TP has exerted some considerable influence on the reinforce of the EASM, accompanied by the northward migration of the summer precipitation belt shifting northward at the beginning of 21st century.