

LARGE-SCALE ATMOSPHERIC CIRCULATION EVOLUTION ASSOCIATED WITH SUMMER MONSOON OUTBREAK IN THE SOUTH CHINA SEA

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By using mainly the NCEP/NCAR reanalysis data (1980-1996), in order to investigate the evolution features of large-scale atmospheric circulation associated with the summer monsoon outbreak in the South China Sea region, the composite analyses are completed in accordance with the outbreak date of summer monsoon in the South China Sea region.

The results showed clearly that the wind field in the lower troposphere, the geopotential height field in the upper troposphere, the humidity and vertical velocity fields in the South and Southeastern Asia region are all clearly changed corresponding to the outbreak of summer monsoon in the South China Sea region. The development and activity of the vortex pair at 950 mb in the South and Southeastern Asia region and the withdraw eastwards of the subtropical high at 500 mb from the South China Sea region play an important role in the onset of summer monsoon in the South China Sea region. There are also evident increase of the integrated humidity and vertical velocity at 500 mb in the Bay of Bengal to South China Sea area associated with the outbreak of summer monsoon in the South China Sea region.

The onset of summer monsoon in the South China Sea region is both the part of global circulation evolution from winter to summer and regional abnormal feature.

Key Words: Atmospheric circulation evolution, summer monsoon outbreak, South China Sea