



## **Large-scale Circulation Features Associated with the Heat Wave over Northeast China in 2018 Summer**

Panhong Tao (1) and Yaocun Zhang (2)

(1) Nanjing University, School of Atmospheric Sciences, Nanjing, China (tph199505@163.com), (2) Nanjing University, School of Atmospheric Sciences, Nanjing, China (yczhang@nju.edu.cn)

In late July and early August in 2018, Northeast China suffered from extreme high temperature with the maximum of temperature anomaly exceeding 6 degC. In this study, the large-scale circulation features associated with the heat wave over Northeast China are analyzed using the station temperature data and NCEP/NCAR reanalysis data. The results indicate that strong anomalous positive geopotential height centers exist from lower to upper levels over Northeast China, and the related downward motions are directly responsible for the extreme high temperature anomalies. The westward shift of western Pacific subtropical high (WPSH) and the eastward shift of the South Asia High (SAH) jointly reinforced the geopotential height anomalies and descending flow over Northeast China. In addition, an anomalous Pacific-Japan (PJ) pattern was observed in the lower troposphere, leading to the westward shift of WPSH. Two wave trains emanating from the Atlantic region propagated eastwards along high latitude and mid-latitude, respectively, and converged together over Northeast China, leading to the enhancement of the geopotential height anomalies.