



Large-scale Climate and China daily precipitation extremes

Huan Zhang (1,2,3) and Frank Sienz (1)

(1) Meteorology Institute, Klima Campus, University of Hamburg, Hamburg, Germany (huan.zhang@zmaw.de), (2) SICSS, Hamburg, Germany (huan.zhang@zmaw.de), (3) MPI-M, Hamburg, Germany (huan.zhang@zmaw.de)

The General Extreme Value (GEV) distribution is introduced to simulate the daily extreme precipitation at 632 stations over China during the extended summer season (May to September). Based on the observed climatic conditions (1959—2008), the 50 and 100 year return times of annual extreme precipitation are calculated and the space distribution features are analyzed. To analyze the dynamic dependencies of the precipitation extremes, the GEV distribution location and scale parameters (shape parameter remaining constant) are fitted to indices representing El Niño-Southern Oscillation, the Asian summer monsoon, the subtropical high over East Asia and the Northern Hemisphere mid-latitude circulation; a physical interpretation is presented.