Statistical Modelling of Extreme Rainfall and Temperature in Southern Taiwan

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In this paper, we fit the annual maximum daily rainfall and temperature data for southern Taiwan (Chaiyi, Tainan, Kaohsiung, Hengchun, Dawu and Chenggong station) both with stationary and non-stationary generalized extreme value (GEV) distributions. The non-stationary model means that the location parameter in the GEV distribution is a linear function of time to detect temporal trends in maximum rainfall and temperature. In addition, the return levels of 10, 20, 50 and 100-years and their 95% confidence intervals of the return levels are also provided. This is the first investigation to use generalized extreme value distributions to model extreme rainfall and temperature in Taiwan.