台灣地區一日暴雨之區域頻率分析

This study aims to establish the frequency models of annual maximum 1-day rainfall for the north, central, south, and east regions in Taiwan. The methodology adopted in this study is the index flood method associated with parameter estimation using L-moments. The L-moment based discordancy and heterogeneity measures are used first to detect the unusual data, followed by using goodness-of-fit measure to choose the best dimensionless regional frequency models for each region. The frequency analysis of each site in each region can then be made by index flood method. Seventy-five annual maximum 1-day rainfall data are selected to illustrate the proposed methodology. The results shows that the best data fitted dimensionless regional model for north, central, south, and east regions are Pearson type III distribution, generalized Pareto distribution, Pearson type III distribution, and three-parameter lognormal distribution, respectively. In addition to estimate the 1-day rainfall of various return periods for each region, the frequencies of severe historical storms for each region are also explored.