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題目：Accurate Confidence Intervals for Weibull Percentiles using Bootstrap Calibration

時間：民國 107 年 5 月 24 日 (星期四) 上午 11：30

地點：國立政治大學商學院 260207 教室

摘要：

Modeling rainfall percentiles in the context of the confidence interval is an appropriate technique that can be employed to make inferences about the rainfall characteristic. The coverage probability of the confidence interval is one of the imperative factor that should be considered when making inferences. Accurate confidence bands enhance the degree of the awareness level of rainfall variability at high uncertainty. The main aim of this study is to find the accurate level of confidence intervals for weekly rainfall percentiles derived from Weibull distributions based on the real coverage probabilities which are formed using bootstrap calibration. Weekly rainfall data from 1970 to 2015 in the Colombo city were used for this analysis. A simulation was carried out based on the one weekly series (week 24; 11-17 June) using the bootstrapping approach. It was found that the data series pertaining to the week 24 is well fitted with the two parameter Weibull distribution. Furthermore, the result reveals that the real coverage probabilities of 95% confidence intervals of 50th, 60th, 70th, 80th and 90th weekly rainfall percentiles which were derived using maximum likelihood estimators of Weibull distribution can be attained on average at the levels 95.901%, 97.501%, 97.603%, 97.680% and 97.910% respectively.