



## **Bivariate Frequency Analysis using Archimedean Copula and Nonstationary GEV distribution with Inference Function for Margin method**

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Multivariate frequency analysis has been developing for hydrological data recently. The time-series rainfall data can be characterized to rainfall event by inter-event time definition and each rainfall event has a rainfall depth and rainfall duration. With these two variables, bivariate frequency analysis has performed. In current study, bivariate frequency analysis using Archimedean copula on hourly recorded rainfall data of Seoul from Korea meteorological administration. The parameter of copula model is estimated by inference function for margin (IFM) method and stationary/nonstationary Generalized extreme value(GEV) distribution is used for marginal distribution. As a result, level curve of copula model is obtained and CVM statistic for goodness-of-fit test to compare stationary and nonstationary GEV distribution for margin.