

Bayesian inference for the bivariate extreme model

ABSTRACT

The bivariate extreme distribution based on logistic dependence function is used to model the extreme observations of two different variables. The model is used in a Bayesian framework where no information of prior is available on unknown model parameters. Maximum likelihood method and a Markov chain Monte Carlo (MCMC) technique, Multiple-try Metropolis algorithm are implemented into the data analysis. MTM algorithm is the new alternative in the field of Bayesian extremes for summarizing the posterior distribution. Using simulation study, the capability of MTM algorithm to analyze the posterior distribution is implement. The proposed theoretical methods apply to extreme particulate matter data from two air monitoring stations in Johor.

Keyword: Bayesian framework; Bivariate extreme model; MTM algorithm