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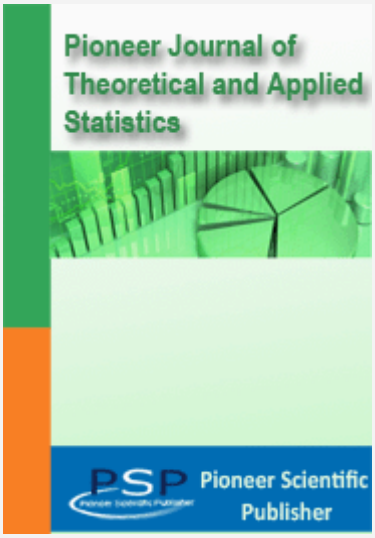

INFERENCES UNDER TRUNCATED GENERALIZED CAUCHY DISTRIBUTION

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Abstract

In this paper, we propose a truncated version of generalized Cauchy distribution suggested by Rider [Generalized Cauchy distribution, Ann. Instit. Statist. Math. 9 (1957), 215-223] in a special setting. One possible use for the proposed model is in life-testing where the domain of definition is not only non-negative but also guarantees no failure before a given time (truncated parameter). The parameters, reliability (RF) and hazard rate (HRF) functions are estimated using the maximum likelihood and Bayes methods. The Bayes estimates (BE's) are obtained under the squared-error and linear exponential (LINEX) loss functions. The computations have been carried out using the Markov Chain Monte Carlo (MCMC) algorithm. Also, the Bayesian prediction intervals (BPI's) of future observation from the proposed distribution is constructed.

Keywords and phrases: guarantee time, maximum likelihood and Bayes estimation, MCMC algorithm, squared error and LINEX loss functions' Bayesian prediction intervals.