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# Approximate Bayesian Estimation And Maximum Likelihood Estimation of Type I Half Logistic Rayleigh Distribution And Its Application

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Type I Half-Logistic Rayleigh distribution is a new development distribution. The main objective of this study is to estimate parameter under Bayesian approach using Lindley's method with two different loss functions and maximum likelihood estimation (MLE). The two loss functions used are squared error loss function (SELF) and linear exponential (LINEX) loss function. Reliability and hazard function are also estimated by using both estimations. For Bayesian estimation, extension of Jeffrey's prior is used. The performance of the proposed estimators, reliability and hazard function are compared using their corresponding root mean squared error (RMSE) by using simulation methods. Different sample sizes are used in all estimations. As a result, estimation of parameters, reliability and hazard function of Bayesian approach under SELF performs better than LINEX and MLE. In conclusion, the estimated parameters, reliability and hazard function of Type I Half-Logistic Rayleigh distribution under SELF is comparatively the best with higher sample size with respect to LINEX loss function and MLE.

## Topics

Session C. Applied optics and engineering

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