BAYES ESTIMATORS FOR AVAILABILITY OF SYSTEMS

By

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ABSTRACT

In this thesis we derived several Bayes estimators for three types of availability (pointwise, steady state, and interval availability) for a system consisting of one unit and one repairman. The work was done under the assumption that failure and repair times are Exponential random variables, the priors are quasi and conjugate, and the Loss Functions are (squared error Loss function and linear exponential Loss function). Also, we derived the risk functions and Bayes risks of the estimators and compared between them through simulation.

Finally, we derived Bayes estimators of Inherent availability for a system consisting of one unit and one repairman in which the failure and repair times are assumed to be Gamma random variables, using conjugate prior and with respect to two Loss functions (SELF, LINEX).