1. A Study in the Steady-State Availability under the Exponential Distribution

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The purpose of this thesis is to compare and analyze the error among the Bayes estimators, GMLE of the state availability A, and true value of A, based on Sinha and Guttman's proposal of the Bayes estimators of the parameters and reliability under the squared-error loss function and the general classes of the noninformative prior distribution for the one-parameter exponential distribution (1976), and on Trader's discussion on the Bayes estimators of the parameters and reliability under the sqrared-error loss function and truncated normal distribution as a conjugate prior distribution (1985).

We will obtain the Bayes estimators and the GMLE of A under noninformative and conjugate prior distribution ; 1) when failure times X and repair times Y follow exponential distribution, 2) when failure times X and repair times Y follow exponential distribution and gamma distribution respectively, and 3) when failure times X and repair times Y follow exponential distribution considering a maintained parallel system consisting of N nonidentical components.