Stochastic Behavior Of A Complex System Involving Major And Minor Failures

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ABSTRACT

This paper deals with the system availability and mean-time-to-failure (M.T.T.F.) of a complex system having three modes viz. good, degraded and failed under waiting incorporating the concept of two types of repair facilities viz. minor and major. It is being assumed that the repair facility is not available instantly from state 1 to state 0; hence it has to wait for the repairing. All type of failures and waiting are assumed to be exponential whereas repair time distributions are general. Several reliability characteristics of interest to system designers as well as operation managers have been evaluated with the help of supplementary variable technique.

Keywords : Stochastic Behaviour, Minor Failure, Major Failure, Human Failure, T.T.F., Reliability, Availability, Supplementary Variable.