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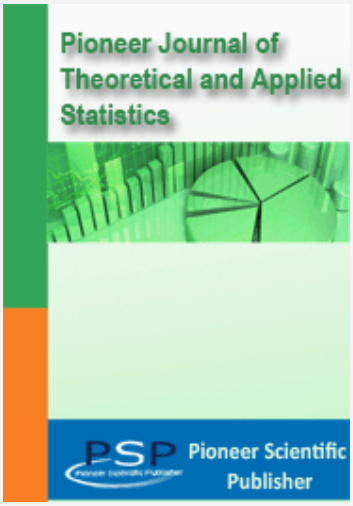

MODELING HUMAN ERRORS AND COMMON-CAUSE FAILURES IN REPAIRABLE TIMES SYSTEMS

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Abstract

We can introduce a model for analysis of a two unit multiple systems with the failed system repair time generally distributed. The system unit can be failed due either to usual hardware failures, common cause failures or human errors. Linear ordinary differential equations are used to obtain a general expression for system steady-state availability for failed system by taking the repair time distributions as Weibull. Generalized expressions for mean time to failure (MTTF) and time dependent availability by taking the repair time distributions as Gamma are presented. Also we introducing some Graphs to illustrate the method.

Keywords and phrases: human errors, linear ordinary differential equations, steady-state availability, mean time to failure (MTTF), Weibull distribution.