

TIME VARYING FAILURE RATES IN RELIABILITY AND MEAN TIME TO SYSTEM FAILURE (MTSF) OF A SUMMER AIR CONDITIONING SYSTEM BY USING ALGEBRAIC METHOD

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ABSTRACT

In this paper, the authors deal with the reliability and MTSF evaluation of a Complex continuous system in a summer air conditioning system for a place in hot and dry weather. In the considered system, two air dampers AD-1, AD2 ; two air filters AF1 , AF2 ; two cooling coils CC1,CC2 ; and two adiabatic humidifiers AH1, AH2 have been taken in parallel redundancy to improve the reliability. A water eliminator is attached with these components by some pipes Pi's. The object of the system is to supply cooled air for selected place. It has been assumed that the failure rates for various components of the complex system follow arbitrary distribution and there is no service facility to repair the considered system. By using Algebraic Method solve the mathematical model of this problem.

KEYWORDS: Algebraic Method, Markovian Process, Weibull or Exponential Distribution, Steady State Behavior.