

# A DISCRETE PARAMETRIC MARKOV-CHAIN MODEL OF TWO UNIT ACTIVE REDUNDANT SYSTEM WITH INSPECTION AND TWO TYPES OF REPAIR

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**Abstract**—*The paper deals with cost benefit analysis of a two identical unit parallel system model. Each unit has two modes—normal ( $N$ ) and total failure ( $F$ ). A failed unit is first goes to inspection to decide whether it needs minor or major repair. Two repairmen (skilled and non-skilled) are always available with the system. Skilled repairman is available for major repair whereas non-skilled repairman inspects a failed unit to decide the type of repair and to do minor repair. The failure time, inspection time and both types of repair times are taken as independent random variables of discrete nature having geometric distributions with different parameters.*

**Keywords:** *Regenerative point, reliability, MTSF, availability, active redundancy, geometric distribution, Markov-Chain.*