



## RELIABILITY ESTIMATION IN MULTI-COMPONENT PARETO STRESS-STRENGTH MODELS

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### Abstract

A Stress-Strength model is formulated for a multi-component system consisting of  $k$  identical components. The  $k$  components of the system with random strengths  $(X_1, X_2, \dots, X_k)$  are subjected to one of the  $r$  random stresses  $(X_{k+1}, X_{k+2})$ . The estimation of system reliability based on maximum likelihood estimates (MLEs) in  $k$  components series system is considered with the assumption that strengths and stresses follow Pareto distribution.

**Keywords and phrases:** Pareto distribution, maximum likelihood estimators, stress-strength model, multi-component system, system reliability.

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