عنوان مقاله:

System Reliability when components share loadings

محل انتشار:

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خلاصه مقاله:

In reliability analyses, it is usually assumed that lifetimes of components are independent and identically distributed. Thus, statistical inferences based on the order statistics have been develop in literature. There exist many engineering systems in which the components share the overall load and then the failure of a component may result in a higher load on the surviving components and hence causes the lifetime distributions change. Many engineering systems exhibit this phenomenon and therefore, the usual statistical methods for estimating the system reliability cannot be used. For example, assume an airplane consisting of twin engines in parallel. When an engine fails, the surviving engine has to work with an additional load in order to properly performance of the airplane. Then, the distribution of the remainingengine is changed. For evaluation reliability of these systems the concept of sequential order statistics (SOS) has been introduced recently in literature. This paper shows that the observed component lifetimes in the above-mentioned systems coincide on the sequential order statistics.

کلمات کلیدی:

Order statistics, Hazard rate model, r-out-of-n systems, Dependent component lifetimes

لینک ثابت مقاله در پایگاه سیویلیکا: