

Residual Life Estimation of K-out-of-N Cold Standby System

Authors : Qian Zhao, Shi-Qi Liu, Bo Guo, Zhi-Jun Cheng, Xiao-Yue Wu

Abstract : Cold standby redundancy is considered to be an effective mechanism for improving system reliability and is widely used in industrial engineering. However, because of the complexity of the reliability structure, there is little literature studying on the residual life of cold standby system consisting of complex components. In this paper, a simulation method is presented to predict the residual life of k-out-of-n cold standby system. In practical cases, failure information of a system is either unknown, partly unknown or completely known. Our proposed method is designed to deal with the three scenarios, respectively. Differences between the procedures are analyzed. Finally, numerical examples are used to validate the proposed simulation method.

Keywords : cold standby system, k-out-of-n, residual life, simulation sampling

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