

Nonparametric tests for reliability based on early failures

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Abstract

Based on a few early failures, Nelson proposed precedence test to test the equality of two lifetime distributions. In this talk, I shall provide a brief review of that test and then propose some modifications of this procedure. I shall construct Wilcoxon-type rank sum precedence statistics and discuss their power properties. I shall show that these simple test procedures have very high power compared to the precedence and maximal precedence tests as well as Wilcoxon's rank sum test based on complete samples.