

Tests for exponentiality against NBRUE alternative life distributions *

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Abstract

The empirical Laplace transform is utilized to construct a family of tests for the null hypothesis that a random variable is exponentially distributed. The tests are consistent against the ‘new better than renewal used in expectation’ (NBRUE) class of alternatives. The limiting distribution of the test statistics is derived in case of a general underlying distribution, and the exact local Bahadur efficiency is calculated for several families of alternatives. The finite-sample properties of the proposed procedures are investigated via simulation.

*Received: January 4, 2007; Accepted: February 27, 2007.

Key words and phrases: goodness-of-fit test, empirical Laplace transform, life distributions, exact slope.

AMS 2000 subject classifications. Primary 62G10; secondary 62G20.

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