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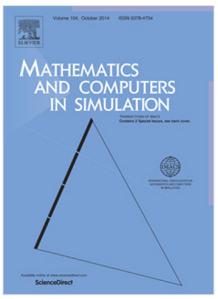

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Inference for the Burr XII Reliability under Progressive Censoring with Random Removals

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Abstract

The inference about the reliability function of Burr XII distribution using the concept of generalized variable method based on progressively type II censoring with random removals, where the number of units removed at each failure time has a discrete uniform distribution, is proposed. As assessed by simulation, the coverage probabilities of the proposed approach are found to be very close to the nominal level even for small samples. The proposed new approaches are computationally simple and are easy to use. The method is illustrated using two examples.

Key words: Burr XII distribution, Generalized variable method, Progressively type II censored sample, Uniformly distributed random removals, Reliability function

1 Introduction

In this study, we consider the case of progressively type II right censoring scheme with uniformly distributed random removals. In the presence of these progressively type II censored data, reliability analysis is utilized to assess the lifetime data under the Burr XII distribution (or simply