

双参数指数分布的可靠寿命的广义置信下限

董岩, 徐兴忠, 杨雪姣

北京理工大学数学系, 北京 100081

收稿日期 2007-7-11 修回日期 网络版发布日期 2008-10-16 接受日期

摘要 基于双参数指数分布定数截尾数据,利用Weerahandi给出的广义置信区间的概念,建立了可靠寿命的广义置信下限,并从理论上证明了我们给出的广义置信下限是精确的,即基于广义置信下限的区间估计的覆盖率等于要求的置信水平.广义置信下限需要通过数值方法得到,但是计算方法是简单直接的.在小样本情形下,通过对基于广义置信下限的置信区间与Engelhardt-Bain近似置信区间覆盖率的模拟比较,发现广义置信下限更令人满意.

关键词 [双参数指数分布](#),[可靠寿命](#),[定数截尾数据](#),[广义枢轴量](#),[广义置信区间](#).

分类号 [62N05](#)

A Generalized Lower Confidence Limit for the Reliability Life of a Two-Parameter Exponential Distribution

DONG Yan, XU Xingzhong, YANG Xuejiao

Department of Mathematics, Beijing Institute of Technology, Beijing 100081

Abstract Based on type II censored data, a generalized lower confidence limit is constructed for the reliability life of a two-parameter exponential distribution by using the concept of a generalized confidence interval due to Weerahandi. It is shown that the interval is exact, that is, its coverage probability is equal to the required confidence level. The confidence limit has to be numerically obtained, however, the computation is simple and straightforward. For small sample, simulation study shows that compared to the approximate interval due to Engelhardt-Bain, the coverage probability of the confidence interval based on generalized lower confidence limit is more satisfactory.

Key words [Two-parameter exponential distribution](#) [reliability life](#) [type II censored data](#) [generalized pivotal quantity](#) [generalized confidence interval](#).

DOI:

通讯作者

扩展功能

本文信息

- ▶ [Supporting info](#)
- ▶ [PDF\(387KB\)](#)
- ▶ [\[HTML全文\]\(0KB\)](#)
- ▶ [参考文献](#)

服务与反馈

- ▶ [把本文推荐给朋友](#)
- ▶ [加入我的书架](#)
- ▶ [加入引用管理器](#)
- ▶ [复制索引](#)
- ▶ [Email Alert](#)

相关信息

- ▶ 本刊中 包含“[双参数指数分布](#),[可靠寿命](#),[定数截尾数据](#),[广义枢轴量](#),[广义置信区间](#).”的 [相关文章](#)
- ▶ 本文作者相关文章

- [董岩](#)
- [徐兴忠](#)
- [杨雪姣](#)