指数分布场合下双应力步加试验的设计

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摘要　　本文利用指数分布场合下双应力无交互作用时定时步进应力加速寿命试验~(简称步加试验) 的非退化试验设计与退化试验设计的关系,将双应力试验设计转化成单应力试验设计, 在``使得工作应力下产品对数分位寿命的极大似然估计的渐近方差最小''的最优准则下, 给出双应力无交互作用时定时步加试验的设计方法, 同时证明该设计也是D-最优的.

关键词　　指数分布, 步加试验, 最优设计.

分类号

Planning Step-Stress Accelerated Life Tests with Two Experimental Factors for Exponential Distributions and Type I Censoring

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Abstract In this article, according to the optimal criterion of minimizing the asymptotic variance of the maximum likelihood estimation of the logarithm of the 100pth-percentile in the lower tail of the failure-time distribution at work conditions, methods and guidelines are given for planning two-factor time step-stress
accelerated life test experiments (ALT) for models in which there is no interaction between the factors when life-time of the tested products is exponential distributed at constant testing conditions. The design given here is also proved to be D-optimal.

Key words Exponential distribution, step-stress ALT, optimal design.

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