ESTIMATING AND PLANNING STEP STRESS ACCELERATED LIFE TEST FOR GENERALIZED LOGISTIC DISTRIBUTION UNDER TYPE-I CENSORING

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ABSTRACT

This paper presents estimation and derivation of optimum test plan for time step stress accelerated life test (SSALT). The maximum likelihood (ML) method is applied to estimate the unknown parameters of the generalized logistic distribution, to construct the asymptomatic confidence intervals, and to predict the value of the scale parameter and the reliability function under the usual conditions. The scale parameter of the lifetime distribution is assumed to be an inverse power law function of the stress level. Moreover, we consider minimizing the determinant of Fisher information matrix to obtain the optimum time of changing stress point, and also the optimum censoring time. Finally, numerical simulation is introduced.

KEYWORDS: Accelerated Life Test, Step Stress, Type-I Censoring, Maxi-Mum Likelihood Estimation, Fisher Information Matrix, Optimum Test Plan, Generalized Logistic Distribution