A Comparison of Accelerated Life Test Plans for a Sensor Level Sealing

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Abstract: Previous work on planning accelerated life tests (ALT) has been focused on the optimal and compromise test plans with constant stress to minimize the variance of a specific estimator. This article compares the optimal, compromise 4: 2: 1 and compromise plans with $\pi_M = 0.2$, for an ALT designed to a sensor level sealing of a fuel pump. The comparison is based on the large sample properties of the maximum likelihood estimator for the quantile of interest using the lognormal distributions. The results show that it is preferable to implement a compromise test plan because it is more robust than optimum plans.

Keywords: Accelerated Life Test Planning, Approximate Variance of the Quantile, Lognormal Distribution