

# Design Strategies for an Accelerated Life Test

李宜真  
國立成功大學統計學系

## Abstract

Due to time constraint and experimental cost, how to plan an efficient accelerated life test (ALT) to obtain more accurate lifetime information of products is an important research issue. Many literatures proposed strategies to design a locally optimal planning of an ALT under the pre-specified planning values of parameters. In addition, the techniques of the Bayesian and sequential designs are proposed to deal with the practical issues. However, the true parameters, the prior knowledge, and the historical data are usually unknown before the experiment. Hence, this study adopts a minimax strategy to obtain a more robust design for an ALT. To find a minimax design efficiently, this study adopts particle swarm optimization (PSO) techniques. The result shows that the minimax design can be determined as long as we specify the range of sample failure probability and provide candidate models. In this talk, the review of planning strategies for an ALT will be provided, and the on-going proposed method will be introduced.