# Minimax Designs for Accelerated Life Tests

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## 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 strategies were proposed to design a locally optimal planning of an ALT under the pre-specified planning values of parameters. However, the optimal design for an ALT also depends on model parameters are usually unknown before the experiment. To deal with the problems, this study adopts a minimax criterion to obtain a more robust design for conducting an ALT. Particularly, the minimax design is determined once we specify the range of sample failure probability under a specific failure model. To find the minimax design efficiently, this study adopts the particle swarm optimization (PSO) technique. Finally, compared to the locally optimal design via simulation study, the minimax design is more robust and more practical.