



## 107 年度 國外教授來訪學術演講「Optimal simple SSALT plan for one-shot devices under exponential distributions」演講

時間：2018-10-23

地點：S433

Step-stress accelerated life tests (SSALTs) wherein devices are subject to elevated stress levels to induce rapid failures are more efficient and less costly than constant-stress accelerated life tests to collect lifetime information of the devices. In this talk, optimal simple SSALT plan for one-shot devices under exponential distributions is considered.

The design minimizes the asymptotic variance of the maximum likelihood estimate of the mean lifetime under normal operating conditions in terms of three decision variables, including stress levels, inspection times, and sample allocation. An expectation-maximization algorithm will be presented to find the

maximum likelihood estimates of the model parameters and the mean lifetime. A procedure will then be presented to determine the decision variables when a range of stress levels, the experimental termination time and normal operating conditions are given.



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