

An Introduction to Degradation Analysis

彭健育

中央研究院統計科學研究所

Abstract

High-quality products are frequently designed with high reliability and developed in a relatively short period of time. Manufacturers must achieve product reliability quickly and efficiently within a limited time for internal reliability tests. One problem with traditional life tests is the lack of sufficient time-to-failure data to effectively make inferences about a product's lifetime. Under this situation, if there are quality characteristics related to the degradation of physical characteristics over time, which are related to product reliability, an alternative option is to use sufficient degradation data to accurately estimate the product's lifetime distribution. In this talk, I will show you how to analyze degradation data from the different perspective of data structures. A general degradation model will be introduced and a consistent interpretation between physical/chemical mechanisms and statistical explanation will be provided.