國立成功大學統計學系
專題演講

時　　間：110 年 10 月 22 日 (星期五) 上午 10:30 – 11:30
地　　點：統計學系一樓階梯教室 (62115)
演 講 者：王義富 教授
　　　　　國立中正大學數學系
題　　目：Nondecreasing Degradation Data Analysis on Gamma Process
茶　　會：上午 10:00 – 10:30 (統計學系二樓教師休息室)

Abstract

For high-reliability products, degradation analysis is a commonly used tool to predict the product's lifetime. Therein, the gamma process (GP) model is most widely utilized degradation model to fit the monotonic degradation path. However, as the monotonic degradation path appears some zero-increment cases, it causes that the GP model can't be adopt to implement the degradation analysis. Thus, in this work, we propose an nondecreasing gamma process (NGP) model incorporated the mixture probability distribution to deal with the zero-increment degradation data. Moreover, we observe that the degree of decay is usually violent with experiment time, such that we consider the probability of occurrence of zero-increment should be highly related to the experiment time. Hence, we further extend the NGP model to propose the non-homogeneously nondecreasing gamma process (NNGP) model by assuming the probability of occurrence of zero-increment to be a function of experiment time. The simulation studies are carried out to verify our proposed NGP and NNGP models. Finally, the results of real data example further reveal that our methodologies are feasible and the corresponding reliability predictions are quite precise.

敬請公佈 歡迎蒞臨 國立成功大學統計學系暨數據科學研究所 敬邀

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