



## AN UPDATED BAYESIAN RELIABILITY ANALYSIS BASED ON STEP-STRESS ACCELERATED DEGRADATION DATA VIA GAMMA PROCESSES

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Degradation analysis is more efficient than the conventional life test in drawing reliability assessment for high quality products. This research aims on the Bayesian approach to the step-stress accelerated degradation test when the degradation data of different products are collected via independent gamma processes. Based on the accelerated data, the prior distributions are updated when more data are observed by times for a new similar product under normal use condition. Sequential reliability inference will be made based on the updated posterior distribution of the underlying parameters with the aid of Markov chain Monte Carlo method. Simulation study and an illustrative example will be presented to show the appropriateness of the proposed method.

**Keywords:** Step-stress accelerated degradation test; Gamma process, reliability inference, Bayesian approach, MCMC.