



Mathematical Sciences
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Colloquium Series

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4pm

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For further information,
please contact Dr. Emil Schwab,
eschwab@utep.edu

Dr. Naijun Sha

The University of Texas at El Paso

Statistical Analysis for Progressive Stress Accelerated Life Testing

Abstract

Step-stress accelerated life test (SSALT) is often applied in various fields to reduce cost and experiment time in collecting information about the lifetime of highly reliable products. In this talk, I briefly introduce the SSALT and extend this useful model to a progressive stress accelerated life testing with Birnbaum-Saunders lifetime distribution, leading to a generalized Birnbaum-Saunders distribution on the lifetime of products in the test. Some interesting properties of this highly flexible distribution are outlined, and a new Bayesian approach for inference is proposed in comparison with the traditional likelihood-based approach. Real data are analyzed for illustrative purposes to demonstrate the efficiency and accuracy of the proposed Bayesian method.