A Review on Trend Tests for Failure Data Analysis

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Abstract: *Trend detection is an important task in failure data analysis in both reliability and maintenance. Usually, detecting certain possible trend in failure events of systems or items is the first step of data handling, and the result of trend detection indicates some directions for further statistical analysis of these data. Available statistical tests commonly used for detecting trends in failure events collected over time as well as the underlying hypotheses being tested are reviewed in this paper. Directions for future research on statistical trend tests are suggested at the end of the paper. These suggestions will address issues concerning analysis of failure data obtained from single and multiple systems.*

Keywords: *Failure data analysis, statistical trend tests, homogeneous Poisson process, monotonic trend, multiple systems*