

Control Charts for the Lognormal Distribution

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Abstract

Control Charts are the main tools of Statistical Process Control. They are used for deciding whether a process is statistically stable or not. Much theory and many applications have been developed for the Gaussian (Normal) distribution in this area. However, in real data sets we usually face up nonnormal processes. Consequently, this theory does not apply.

In the present paper, we focus attention on the lognormal distribution that can be considered as a special nonnormal case. In particular, we present the Shewhart Control Charts developed up to now, under such distributional assumptions and a new Control Chart based on the CUSUM theory.

Keywords and Phrases: Control Chart, Nonnormality, Shewhart, CUSUM, Average Run Length, Lognormal.