



COMPARISON OF MULTIVARIATE EXPONENTIALLY WEIGHTED MOVING AVERAGE AND GENERALIZED VARIANCE |S| PROCEDURES WITH INDUSTRIAL APPLICATION

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ABSTRACT

In this paper, comparing between two procedures: Multivariate Exponentially Weighted Moving Average (MEWMA) quality control chart and Generalized Variance |S| quality control chart. The first procedure MEWMA is an example of a multivariate charting scheme whose monitoring statistic is unable to determine which variable caused the signal. The second procedure is a Generalized Variance |S| quality control chart for the multivariate process, it is a very powerful way to detect small shifts in the mean vector. Generalized variance chart allows us to simultaneously monitor whether the joint variability of two or more related variables is in control. In addition, this paper provides a comparison between MEWMA and generalized variance |S| multivariate control chart procedures by application with real data.

KEYWORDS: Average Run Length Performance, Monitoring Process, Multivariate Statistical Analysis, Quality Control

2010 Mathematics Subject Classification (MSC) code: 62P30

Article History

Received: 04 Jul 2018 | Revised: 28 Jul 2018 | Accepted: 23 Aug 2018
