



Contribution ID: 82

Type: **not specified**

Adaptive EWMA Control Charts for Standard Deviation: A Comparative Study

This research investigates the performance of adaptive Exponentially Weighted Moving Averages (EWMA) control charts when monitoring the standard deviation of a process. It is known that when we use a fixed value for the smoothing parameter λ of the EWMA chart we restrict its ability to detect shifts of changing magnitudes. In this paper, we propose nine EWMA charts for the standard deviation with adaptive lambda. We check their performance through simulations and we conclude that they perform significantly better than the corresponding fixed λ chart, under various performance measures, like Average Run Length (ARL), and Median Run Length (MRL).

Special/ Invited session

Classification

Both methodology and application

Keywords

EWMA, Adaptive Control Charts, Standard Deviation

Primary author: MARAVELAKIS, Petros (University of Piraeus, Department of Business Administration)

Presenter: MARAVELAKIS, Petros (University of Piraeus, Department of Business Administration)

Track Classification: Statistical Process Monitoring