



Contribution ID: 11

Type: **not specified**

Multivariate vs. multi-stream EWMA control charts

Wednesday, 18 September 2024 09:00 (20 minutes)

Multivariate EWMA control charts were introduced in Lowry et al. in 1992 and became a popular and effective tool for monitoring multivariate data. However, multi-stream data are somehow related to the aforementioned framework. In both cases, correlation between the components respective streams is considered. However, whereas the multivariate EWMA charts deploys a distance (Mahalanobis) in the multivariate space, the multi-stream EWMA chart comprises a set of univariate control charts. In this talk, we discuss feasible calculation of the detection performance of multi-stream EWMA charts (not many results are available so far) and compare their detection behavior to the better investigated multivariate EWMA charts. Essentially, numerical methods are applied. Extensive Monte Carlo studies confirm their validity.

Type of presentation

Talk

Classification

Mainly methodology

Keywords

average run length, statistical process monitoring, multivariate data

Primary author: KNOTH, Sven (Helmut Schmidt University Hamburg, Germany)

Presenter: KNOTH, Sven (Helmut Schmidt University Hamburg, Germany)

Session Classification: Multivariate statistical process control

Track Classification: Process modelling and Control