

عنوان مقاله:

Phase II monitoring of auto-correlated linear profiles using multivariate linear mixed model

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خلاصه مقاله:

In the last few decades, profile monitoring in univariate and multivariate environment has drawn a considerable attention in the area of statistical process control. In multivariate profile monitoring, it is required to relate more than one response variable to one or more explanatory variables. In this paper, the multivariate multiple linear profile monitoring problem is addressed under the assumption of existing autocorrelation among observations. Multivariate linear mixed model (MLMM) is proposed to account for the autocorrelation between profiles. Then two control charts in addition to a combined method are applied to monitor the profiles in phase II. Finally, the performance of the presented method is assessed in terms of average run length (ARL). The simulation results demonstrate that the proposed control charts have appropriate performance in signaling out-of-control conditions.

کلمات کلیدی:

Average run length (ARL), multivariate exponential weighted moving average covariance (MEWMC) chart, multivariate linear mixed model (MLMM), within profile correlation, multivariate multiple linear regression profiles, phase II

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