عنوان مقاله:

An integrated model for simultaneous determination of production, maintenance, and control chart parameters with autocorrelated data

محل انتشار:

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خلاصه مقاله:

Statistical process control, maintenance policy, and production have commonly been studied separately in literature whereas their integration can be lead to more favorable conditions for the entire production systems. Among all studies on integrated models, the underlying process is assumed to generate independence data. However, there are practical examples in which this assumption is violated because of the extraction of correlation patterns. Autocorrelation causes numerous false alarms when the process is in the in-control state or makes the traditional control charts to react slowly to the detection of out-of-control state. The mixed EWMA-CUSUM modified control chart is an effective tool for monitoring autocorrelated data. In this paper, we propose an integrated model subject to some constraints for the selection of control chart, production, and maintenance policy parameters in the presence of autocorrelated data. Due to the complexity of the model, a particle swarm optimization (PSO) algorithm is applied to select optimal decision variables. Numerical studies and sensitivity analysis are provided for more investigations.

کلمات کلیدی:

Statistical process control, Production, Maintenance policy, Autocorrelated process, PSO algorithm

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