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Recent Developments on Distribution-Free Phase-I Monitoring - An Overview and Some New Results

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Phase-I monitoring plays a vital role as it helps to analyse the process stability retrospectively using a set of available historical samples and obtaining a benchmark reference sample to facilitate Phase-II monitoring. Since, at the very beginning process state and its stability is unknown, trying to assume a parametric model to the available data (which could be well-contaminated) is unwarranted, and to this end, nonparametric procedures are highly recommended. Earlier research on nonparametric Phase-I monitoring was primarily confined to monitoring location, scale, or joint location-scale parameters. Recent developments have suggested including skewness or kurtosis aspects as well in monitoring. The current paper gives a broad overview of various available charts and offers some new results on the adaptive choice between the charts when nothing is known. Some industrial applications are discussed.

Keywords

Nonparametric, Phase-I, Control Chart, Joint Monitoring

Classification

Both methodology and application

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