

Multivariate statistical process control with industrial applications

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Abstrak

This applied, self-contained text provides detailed coverage of the practical aspects of multivariate statistical process control (MVSPC) based on the application of Hotelling's T^2 statistic. MVSPC is the application of multivariate statistical techniques to improve the quality and productivity of an industrial process. The authors, leading researchers in this area who have developed major software for this type of charting procedure, provide valuable insight into the T^2 statistic. Intentionally including only a minimal amount of theory, they lead readers through the construction and monitoring phases of the T^2 control statistic using numerous industrial examples taken primarily from the chemical and power industries. These examples are applied to the construction of historical data sets to serve as a point of reference for the control procedure and are also applied to the monitoring phase, where emphasis is placed on signal location and interpretation in terms of the process variables.