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Title

Mahalanobis-Taguchi System Improving Separation Performance of Normal and Abnormal Space

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Abstract

The Mahalanobis-Taguchi system (MTS) based on quality engineering is one of the techniques of failure diagnosis using multivariate data and attracts increasing attention in recent years. The MTS does not fully consider the statistical property of a Mahalanobis distance measure, which affects discrimination rate for the analyzed data. In this study, a new method, in which the statistical property of the Mahalanobis distance is incorporated and normal and abnormal space can be separated efficiently, is proposed. Diagnosis examples for clothing data show that the proposed method performs better than the conventional technique.