Urban rail transit key equipment fault diagnosis method based on statistical analysis

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Abstract

Along with rapid construction of urban rail transit in China, "Safe, fast and comfortable" has become development trends and needs of modern urban rail transit. However, in the development process, fault diagnosis and early warning problems to key equipment of urban rail transit vehicle remains a difficult problem. This paper first summarizes and compares the fault diagnosis technologies to different equipments, and then studies fault diagnosis and prediction methods to key equipment of rail transit vehicles with the clustering analysis, support vector machines and other statistical methods. Finally, the paper presents an example analysis to door and walking system of urban rail transit vehicle, the result shows that the presented method is effective for solving a class of key equipment failures and can be widely promoted.

Keywords

Urban rail transit vehicle, Fault diagnosis, Statistical analysis, Support vector machine, Cluster analysis.

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