Safety state evaluation of urban rail vehicle in transit based on fault diagnosis and early warning

Yu Liang and Guoqiang Cai

Beijing Jiaotong University, China

Abstract

urban rail traffic has become one of the most important public transit constitute part in China's (extraordinary) large cites, but the vehicle operation safety situation is not optimistic and traffic accident in transit occurs frequently. City rail vehicle operation safety is related to the life of passengers, vehicle traveling accident has seriously affected the continuous development of urban rail transit. Urban rail vehicles is mainly consisted of bogie, traction system, running control system and supplementary facilities, each part affects the vehicle safety but have different degrees. It monitors the safety state of each part by in transit fault diagnosis and early warning, applies Bayes network and the maximum likelihood estimation theory, comprehensively evaluates the urban rail transit vehicle safety status, gives the evaluation results based on the fuzzy theory, and provides quantity guidance for the safe operating of the vehicle.

Keywords

Fault diagnosis, Bayes network, Maximum likelihood estimation theory, F Safety state evaluation.