

26 April 2019

RSU International Research Conference 2019 https://rsucon.rsu.ac.th/proceedings

Advance of Safety in Japanese Railway Systems; Condition Monitoring System for Running Safety.

Akira Matsumoto

Railway Research Center, Nihon University, Japan Corresponding author, E-mail: matsumoto.akira21@nihon-u.ac.jp

Abstract

The safety of Japanese railway system is very high and no accidents with passenger fatalities have occurred for more than ten years. Such high safety of railways has been brought by advanced technologies of railway system components and various safety systems, such as developments of new train signaling system; ATS, ATC, etc.

In this paper, author will introduce the advance processes in "signaling systems", "vehicle dynamics, i.e. running safety", "braking systems" and "fire prevention". For an example of countermeasures of accidents, the development of a condition monitoring system of wheel/rail contact condition, called "PQ monitoring system", which can observe friction conditions and safety against derailments on in-service trains every day for prevention of "flange-climb derailments".

Keywords: Safety, Japanese railway, Signaling system, Condition monitoring, Wheel/rail contact, Flange-climb derailment