

Improvement of Running Safety of Railway Vehicles with Yaw Damper during Earthquakes

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In recent years, railroad corporations have become increasingly concerned about running safety for conventional lines during earthquakes, especially in metropolitan areas. Therefore, for trains equipped with yaw dampers, the authors propose that of the yaw dampers are placed symmetrically front-to-back in bogie as a countermeasure against an earthquake. This paper also numerically clarifies that the proposed layout of yaw dampers improves running safety against sinusoidal oscillation. An actual bogie oscillation test was performed to validate the numerical results. From probabilistic perspective, it is shown that the proposed layout of yaw dampers and the conventional guard usually placed on sharp curves have almost same effects on improving running safety against seismic vibration of track.