

**Estimation Method of Lateral Vibration Acceleration of Car Body used for Safety Evaluation of
Railway Vehicles against Crosswind**

Hiroyuki KANEMOTO Yu HIBINO

The critical wind speed of overturning is often evaluated by the "RTRI's detailed equation". In the equation, the lateral vibration inertia force of car bodies is considered as one of acting forces affecting overturning, and the lateral vibration acceleration is assumed from past running test results. This paper shows that the critical wind speed of overturning can be accurately calculated by using simulation results of the lateral vibration acceleration occurring at the center of gravity of a car body under strong crosswinds. In addition, a new method is proposed to estimate the lateral vibration acceleration using track alignment data.