

**Fundamental Study on the Effect of Cross-sectional Shape
of Railway Vehicle on Its Side Aerodynamic Force**

Koji NAKADE Tatsushi OTOBE Yuhei NOGUCHI

This report presents the basic experimental and numerical examination of the influence of cross-sectional shape of railway vehicles on the side aerodynamic forces with the use of the two-dimensional vehicle models. Side force coefficients were measured in the wind tunnel tests with 1/40th scale vehicle models whose roof and shoulder parts have various radii of curvature. In addition, the numerical simulation (large eddy simulation) of the airflow around the vehicle model was conducted to reproduce and investigate the detailed airflow field of the wind tunnel tests.