

**Experimental Method in Wind Tunnel Tests to Simulate the Turbulent Flow
on the Roof of High-speed Trains**

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Difference of flow conditions between wind tunnel tests and actual trains sometimes brings large errors in the estimation of aerodynamic noise from devices like pantographs on the train roof and also aerodynamic forces acting on them. In this study, turbulent flow conditions around a pantograph of an actual running train are measured first. Next we propose an experimental method of placing obstacles upstream the test section of a wind tunnel in order to simulate the turbulent flow. Finally, aerodynamic noise and force of a pantograph model are evaluated under the condition with or without the obstacles.