

**Measurement Method of Lateral Force Utilizing Shear Strains
inside the Wheel Load Measuring Holes of Instrumented Wheelset**

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This paper proposes a new configuration of instrumented wheelset, which is used to measure the wheel/rail contact forces for the purpose of assessment of a running safety and evaluation of a curving performance of railway vehicles. The lateral force, which is a component of the wheel/rail contact forces, is measured as strains which are caused by the bending deformation of the wheel web in the conventional instrumented wheelset. In this principle of measurement, the measured lateral force would be affected by the application of the wheel load, which leads a reduction of the measurement accuracy of the lateral force. This paper describes in detail a novel instrumentation method for measuring the lateral force which can reduce the influence of the wheel load by using of the shear strains inside holes of the wheel web.