

## **An Investigation on the Influence of Wheel and Track Parameters upon Rolling Noise**

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For the meter-gauge lines in Japan, the noise generated by railway vehicles mainly consists of rolling noise and traction-motor fan noise. Rolling noise is generated by vertical vibration of the wheel and rail, which is induced by a relative displacement between them due to the roughnesses on their surfaces. Now, in new vehicles, the traction-motor fan noise has been considerably reduced by introduction of a newly developed traction-motor, and the relative contribution of rolling noise to the total noise is therefore larger than before. Therefore, in order to reduce the wayside noise, a better understanding of rolling noise is required. In this paper, the characteristics of rolling noise are presented based on field tests, and an attempt to investigate the influence of wheel and track parameters upon rolling noise is made by using theoretical models of rolling noise.