

## **Investigation of High-frequency Noise Above 10 kHz Generated on Curved Sections of Railway Lines**

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An understanding of the wheel/rail noise has been made by measurements and theoretical models. The wheel/rail noise significantly influences wayside noise in the frequency range from 250 Hz to 8 kHz. Some studies show that, when a train runs on a gentle curve, the wheel/rail noise is greater than the usual rolling noise by 5dB or more, and this is closely related to the occurrence of the noise of higher frequencies above 10 kHz. In this paper, an attempt to investigate the mechanism of noise by running tests was made. As a result of the tests, it is found that during the train passage through a curve, the wheels on the outside rail are the most important source and, after the train passage, the outside rail is the predominant source. Furthermore, the vibrational properties of a rail at high frequencies were experimentally examined using a shaker. It is confirmed that free wave propagation occurs in the rail at higher frequencies above 10 kHz owing to low decay rates.