Countermeasures of Low-Frequency and Aerodynamic Noise Emitted from Shinkansen Train

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When a Shinkansen train runs at high speeds in an open section, low-frequency noise and audible noise are emitted from the bogies. It is essential to reduce these aerodynamic noises in order to achieve further speed increases in the future. To understand the generation mechanisms of low-frequency and audible noise, field tests and low-noise wind tunnel tests were carried out. This paper describes the measurement method used in the wind tunnel testing and the development of countermeasures against low-frequency and audible noise.