

Analysis of Wayside Low-Frequency Noise from a High-Speed Train

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The authors have performed laboratory experiments and field measurements to investigate a low-frequency noise generated at wayside from a high-speed train running. The measurements indicate the observed low-frequency sound source consisting of three types of mechanism, which is a pressure variation around the nose and tail parts of the train, the low-frequency acoustic pressure waves aerodynamically caused by the train itself and viaduct structure-borne sound. The measurement conducted at higher-speed region has revealed that the major sound source of the low-frequency noise was attributable to aerodynamically generated unsteady noise, which is analogous to a line source.