

Estimation of Wayside Noise of Shinkansen train based on Noise Source Distribution

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A method to estimate the noise level along the wayside of Shinkansen is proposed based on two-dimensional sound pressure level distribution measured with a 2-dimensional microphone array. First, noise sources distributed around the train are modeled as discrete point sound sources. Second, the noise level at the point 25 m apart from the track center is estimated by considering the effect of the acoustic barrier and the difference in the lower region noise due to the track conditions. The estimated results are validated by comparison with the results measured by a usual omni-directional microphone in the field test.