

Study on a Prediction Model of Railway Noise in Consideration of Reflection on Bridge

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This paper gives a prediction model for the wayside noise close to the overpass on the Shinkansen line. In order to develop the model, sound reflection on the bottom surface of the bridge should be taken into consideration. The effect of the sound reflection was examined by acoustic experiments with scale-models. Then, an image source and a correction value due to the reflection on the finite surface were introduced in the model. The prediction model was validated by comparing the measured results with the results simulated with the model. It was also found out by using the model that the image sources corresponding to the noise generated from the lower part of cars have a large influence on the wayside noise.