Railway Noise Prediction Model around Tunnel Portal Including the Screening Effect due to Vehicles

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In order to estimate the Shinkansen wayside noise around tunnel portals, a prediction model is proposed. In the model, the noise from tunnel section is composed of two sound sources, i.e. noise directly emitted from a vehicle, and multiple-reflected noises in the tunnel. Both a field test and an acoustic model test were carried out to understand noises around tunnel portal. On the basis of these results, both the screening effect due to vehicles and the directional characteristics of the multiple-reflected noises are introduced in the model.