Evaluation of Novel Noise Barrier with Hinge Mechanism for Acoustic Performance and Durability

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The authors have proposed a novel noise barrier which can reduce wind load with use of hinge mechanism. It has been confirmed through the acoustic test that the noise barrier satisfies practical noise insulation performance. In order to estimate the applicability of the proposed barrier to the noise reduction, the acoustic analysis in the frequency domains was conducted. Then the numerical results indicated that the analysis is applicable to visualizing the distribution of noise transmitted from the running train. Exposure test in the outdoor environment confirmed that the noise barrier made opening-closing movement during the strong wind like typhoon and indicated enough durability for the natural field use.