

Numerical Simulation based Evaluation Method of Structure-Borne Sound of Reinforced Concrete Viaduct

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In this study, regarding to reinforced concrete viaduct, a simulation system of structure-borne noise is developed, which composes of structural vibration analysis and acoustic analysis. As results of acoustic analysis and measurement, it is found that there is a high possibility that there are frequency bands in which the structure-borne noise is the main factor of noise along the railway. Furthermore, analytical evaluation reveals that by the reinforcement of the center slab, the structure-borne noise reduction effect of 1.1 dB is obtained at the 12.5 m point and 1.8 dB at the 25 m point.