

Evaluation of Soundness of Old Retaining Walls by Using the Vibration Characteristics

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Evaluation methodology of soundness of old railway retaining wall is discussed in this report. It was found out from the percussion tests that the vibration characteristic of the deformed retaining wall was different from that of the sound retaining wall: large Fourier's amplitude of the spectrum was exhibited especially in low frequency range. Two indices, Spectrum area (SA) and Spectrum score (SS), are proposed to evaluate the vibration characteristics of the deformed retaining wall. Relevant analyses of the formerly conducted percussion tests results and prototype scale model test results by using the proposed indices revealed that the proposed indices could work well to distinguish the deformed retaining wall from the sound ones.