A Estimation Method for Equivalent Natural Period with Microtremor Measurement

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   The object of this paper is to propose an estimation method for the equivalent natural period with microtremor measurements on the basis of the correlation between the natural frequency and the yield frequency. A method, which combines Eigensystem Realization Algorithm and some empirical hypotheses of vibration modes, was proposed for identifying the first natural vibration modes of structures. A ratio of the yield frequency to the natural frequency was mostly fixed and the average value of the ratio depends on the type of structure. We proposed a simple procedure for estimating the yield frequency with microtremor measurements.