

Maximum Response Evaluation of Traditional Wooden Houses based on Microtremor Measurements

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The objective of this study is to propose the maximum response deformation evaluation method of traditional wooden houses based on microtremor measurements and the amplitude dependency of natural frequency of houses. The equation of the amplitude dependency of natural frequency is based on the results of seismic observation of wooden houses, shaking table tests and static lateral loading tests of wooden frame specimens. In this study, response spectrum method is used to evaluate the maximum response deformation angle. To confirm the accuracy of the proposed evaluation method, the maximum response deformation angle on the first story of the full scale specimens of shaking table test is evaluated. Moreover, simulation analysis using this proposed evaluation method is conducted against several acceleration response spectra changing the natural frequency of houses as an application example.