A Study on Investigations for Dynamic Properties of Buildings Considering Soil-Structure Interactions by H/V Spectral Ratios of Microtremors

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We proposed the method that evaluates the dynamic properties of buildings, without measurement of vibrations at the same time and at multiple locations in a building, using the H/V spectral ratios of earthquake motions on the building as described in the previous paper. However, as the method is based on the earthquake motion records, a system has to be constructed to monitor these strong motions, and then we have to wait until an earthquake occurs to estimate the dynamic properties. Microtremors are an useful tool for engineers because microtremors present as certain signals rather than noises in many cases. Therefore, in this report, our aim is to adapt the method to accommodate microtremors. First, we observed microtremors in the target building that was used to evaluate the method. Next, we compared the transfer functions and H/V spectral ratios, as we did in the previous study, and we confirmed that the method was microtremor compatible.