
Method of Investigating Dynamic Properties of Buildings, Considering Soil-Structure Interactions by H/V Spectral Ratios

Kenichi NAKANO, Yuzuru YASUI, Shigeki SAKAI, Toshiro MAEDA

In order to inspect the damage to buildings due to vibrations caused by strong ground motions, we investigated the dynamic properties of buildings during earthquake motion, using the transfer function calculated by ground motion records observed in the building. Previous studies have shown that the H/V spectral ratio calculated by microtremors observed at the top of the building were similar to the transfer functions of the building calculated from the records observed at the top and first floor of the building. However, there are no theoretical approaches in these papers. H/V spectral ratios can be used to estimate the dynamic properties of buildings during ground motion. Therefore, in this study, we propose a method of investigating dynamic properties of buildings during earthquake motion using H/V spectral ratios.