

# SITE CHARACTERIZATION OF MICRO LANDFORM USING MICROTREMOR AND FINITE ELEMENT METHOD

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## Abstract

It is essential to know the condition of the ground when considering earthquake disaster prevention and mitigation as well as planning to construct buildings and facilities. It is well known that surface soil conditions and micro topographies (landforms) are influential to the seismic intensity of the ground and hence to the seismic damage. In this study, Chiba city is selected as a target area that has complex micro topographies and a series of microtremor observations have been conducted. Results were represented as a number of horizontal-to-vertical Fourier spectral ratios, i.e. H/V spectra. A series of one-dimensional and two-dimensional analyses were then performed and compared with the microtremor observation results. The effect of complex topographies and soil profiles on the dynamic properties of the ground was examined through the comparison among these results.

It was confirmed by this study that a one-dimensional parallel layer assumption is valid in the areas that are situated in the midst of a landform but that multi-dimensional analyses may be required for the area where landforms varies significantly.

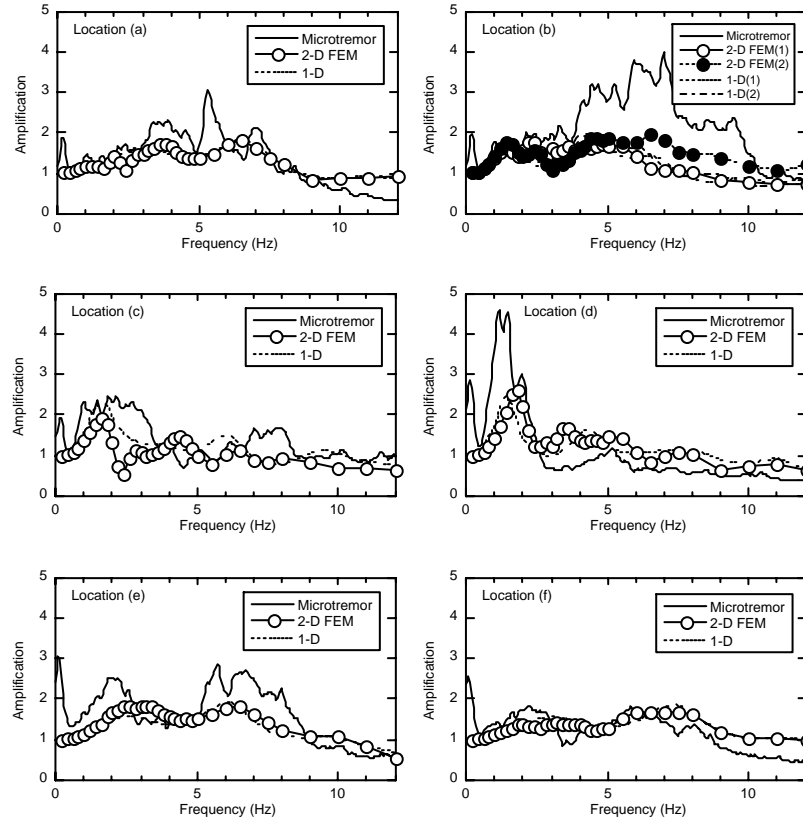


Figure: Comparison between H/V Spectra and Transfer Functions