

H/V spectral analysis based on high density micro-tremor observations in Kochi Plain

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Kochi Plain is located around source region of the great Nankai Earthquake. Strong ground motion is expected in this area, because soft subsoil is widely deposited in Kochi Plain. In this study, we investigate H/V spectra of micro-tremor in the Kochi Plain. Micro-tremor study with single station is cheaper, quick and easier way than sampling boring core. It is convenient to reveal horizontal variation of soil/basement structure. We append 320 measurements in addition to previous reported 380 measurements (JpGU 2012, SSS26-P12). In total 700 measurements are used to H/V spectral analysis. In perspective, dominant periods of H/V spectra around Urado-Bay region are longer than other regions. According to soil/basement model using boring data, the bedrock depth at this region is especially deep but boring which reaches the bedrock is limited. In contrast, H/V spectral analysis is useful to grasp the extent of region with deep soil/basement boundary. Dominant periods of H/V spectra around western part of Kochi Plain are relatively shorter than Urado regions. High density observations in this region show clear local variations. These are not reflected on current hazard maps or seismic intensity estimation maps. Using H/V spectral analysis based on high density micro-tremor observation, we are detecting patterns of soil/basement structure which has not be grasped using only boring core data.

We planned micro-tremor observation with 200m interval and also array observation to construct soil/basement structure model to improve estimation of strong ground motion.

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Keywords: Soil/Basement Structure, H/V spectra, Strong Motion, Kochi Plain, Dominant period

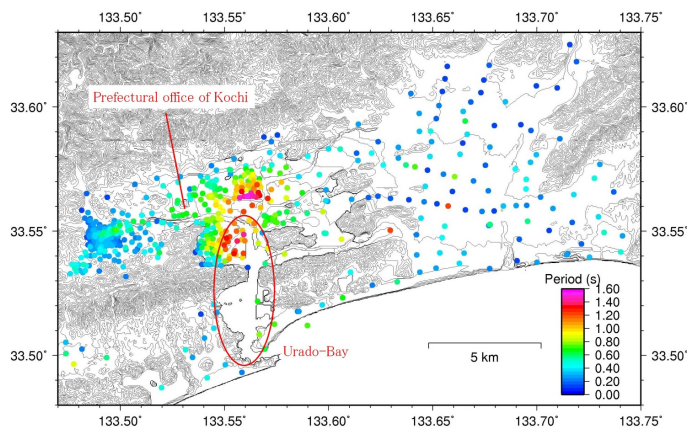


Figure 1 distribution map of H/V spectral analysis based on micro-tremor observations in Kochi Plain