

Estimation of Ground Structure By Microtremor Observation in Penang Island, Malaysia

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Recently, huge earthquakes have been frequently occurred off the west coast of Sumatra Island. The shakes of these earthquakes were felt in many cities of Malay Peninsula and the government of Malaysia has intended to establish seismic design code. In this research, the microtremor array observation has been carried out around the east coast of Penang Island. As a fundamental investigation of the seismic microzonation, the dispersion curve of the phase velocity of the Rayleigh wave has been estimated by applying the SPAC method. Besides, the estimated velocity model was examined by using the H/V spectrum. Since the predominant period on the H/V spectrum was remarkable, the S wave velocity contrast of the subsurface ground and the engineering bedrock can be analyzed and the depth of the subsurface ground is estimated to be dozens of meters.

Keywords: SPAC method, Microtremor observation, H/V spectrum, Malaysia