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SSS031-P08

Room:Convention Hall

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Estimation of S-wave velocity structure in Ookayama, Tokyo, using array microtremors and earthquake observations

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To quantitatively evaluate the site effect, we need to understand a subsurface velocity structure, especially for the S-wave velocity. To predict earthquake ground motions in the large and/or deep basins, such as the Kanto Plain and the Osaka Basin, it is necessary to understand deep subsurface velocity structures. Though phase velocities of surface waves to long periods are required for estimating the deep velocity structures, the power of microtremors is generally small. On the other hand, we can obtain earthquake ground motions for long periods by recording data of large earthquakes. Therefore, we performed the array microtremors observations in and around the Ookayama Campus of Tokyo Institute of Technology where the array earthquake observations have been already carried out. Phase velocities of Rayleigh waves up to a period of 2.5 seconds were obtained by applying the SPAC method for array microtremors data. Also, phase velocities of Rayleigh waves from a period of 3 seconds to 5 seconds were obtained by applying the Semblance analysis for recording data of earthquakes larger than a Magnitude of 5. Moreover, we verified the relationship between directions of wave propagation and phase velocities.

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Keywords: Array microtremors observation, the SPAC method, the F-K analysis, the Semblance analysis, S-wave velocity, the Kanto Plain