Ground type classification for strong motion evaluation based on the characteristics of Phase-Velocity Curves estimated by Microtremor Array Measurements

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1. Introduction
At SIP, in order to create and improve ground model for Kanto, Tokai and Kumamoto, a total of about 25,000 points are formed at miniature arrays and irregular arrays Observations and large array observations have been carried out at about 1,000 places at about 5 km intervals. Amplification of earthquake ground motions, structure model of share wave velocity (S wave velocity, referenced to as Vs) in the shallow part underground which is greatly affected by building and human damage is made. From the dense data acquired, on new correlation between boring data on the correlation between the phase velocity and the geomorphological classification and geological composition of the ground, We were able to organize useful information for creating the ground model.

2. Categorization of ground based on microtremor exploration results
In general, the pV in the high frequency range reflects the soil structure in the basement (depth of several meters to 10 m (3 Hz, 6 Hz, 10 Hz, 3 Hz, 6 Hz, 10 Hz, 6 Hz, 10 Hz, We also tried to classify the ground with reference to the obtained velocity structure. (20 Hz) and examined the correspondence with the micro topographical classification (Wakamatsu and Matsuoka, 2013) and the geological composition.

3. Summary and Future Challenges
As described above, it is possible to categorize the correspondence relation between Pv velocity and ground properties by wide-area, dense microtremor exploration. This result is also necessary as information to be the basis of learning when making ground model modeling work supported by AI. We plan to improve the ground model for strong ground motion prediction by reflecting the results of this typing in concrete work method (setting of Vs structure, data interpolation method etc) of ground model development.

Keywords: ground type casssification, strong motion prediction, phase-velocity curves, microtremor