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Deep S-wave Velocity Structure in Osaka Plains Urban Area Estimated by Microtremor Survey Method

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In order to investigate the S-wave velocity structures under the Osaka Plain, we carried out long-period microtremor array observations at total 30 sites. Which are covering all of Osaka City area.wiht having the east-west transect line across the Uemachi fault. Phase velocities of the fundamental-mode Rayleigh wave in microtremors were obtained by the spatial autocorrelation method and converted to the S-wave velocity structures by using an inversion technique based on the genetic algorithm (GA). The estimated S-wave velocity structures were in agreed with geological structures which were identified by both the observation of the deep wells and seismic reflection profiles. We could indicate that the S-wave velocity structures provide the obvious difference of the upper level of the basement rock between the west-and the east-side along the in Uemachi fault.

Keywords: microtremor, SPAC, Uemachi fault, deep S-wave velocity