

Estimation of Subsurface Structure based on Microtremor and Gravity Survey in the Shikano Area, Tottori Prefecture

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Shikano and Yoshioka earthquake fault occurred on the surface by the 1943 Tottori earthquake. In this study, subsurface structures were determined and we grasped characteristics of ground motion by microtremor and gravity survey in the Shikano area, Tottori Prefecture. Microtremor single-point 3-components observations and array observations were carried out at 156 and 12 sites respectively. As analysis of microtremor surveys data, we estimated S-wave velocity structures by using phase velocities obtained from array observations and thickness of sedimentary layer by using predominant periods of H/V spectrum obtained from single-point 3-components observation records. Gravity observations were carried out at 38 sites. As analysis of gravity surveys data, gravity anomalies with assumed density in 2.4t/m^3 were obtained by using gravity databases, existing data in the east-part of Tottori Prefecture and this study data. We estimated 2D and 3D density structures from the distribution of gravity anomalies.

Keywords: microtremor survey, gravity survey, subsurface structure, hikano area in Tottori Prefecture