

Determination of subsurface structure of Tottori plain using seismic explosion, microtremor and gravity survey

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Seismic explosion survey, Microtremor observations and a gravity survey were made to determine the subsurface structures of the Tottori Plain. This area was severely damaged during the 1943 Tottori earthquake (M7.2), damage being concentrated in the plain. The microtremor data were analyzed by the spatial auto correlation (SPAC) method. The subsurface structures were determined by 1) S-wave velocity structure models obtained at the array observation sites, 2) a 2D bedrock configuration based on the residual gravity anomaly and travel time. This bedrock suddenly deepens from the eastern mountainous area to the plain. The depth to the $V_s=2500\text{m/s}$ layer ranges from a 100m minimum to an 400m maximum.