

Improvement of shallow subsurface structure models based on miniature and irregular array microtremor observations in Kanto Area

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In order to estimate damage caused by strong ground motions from a mega-thrust earthquake, it is important to evaluate broadband ground-motion characteristics in wide area. To realize it, it is necessary to sophisticate subsurface structure models on which shallow and deep ones are integrated. Therefore, we have ever collected as many data as possible obtained by boring and microtremor array surveys, and then have modeled subsurface structures from seismic bedrocks to ground surfaces.

In this study, we focus on advancement of shallow subsurface S-wave velocity structures, especially around engineering bedrocks ($V_s300\sim500\text{m/s}$ layers), in Kanto Area, including Tokyo. We have conducted miniature and irregular array observations at a great deal of sites in Kanto plane since last year. By using these observation data, 1-D and 2-D shallow subsurface velocity structures are estimated. Then, based on these models, the initial geological models are verified and modified if necessary.

Keywords: shallow subsurface structure, velocity structure, miniature array, microtremor