Microtremor survey for subsurface velocity structure of Saga plain

*Masayuki Yoshimi¹, Michiko Shigefuji², Tadashi Maruyama¹

1. Geological Survey of Japan, AIST, 2. Kyushu University

Saga plain, located in northern Kyushu island, is quite flat lowland facing south to the Ariake Sea. An active fault zone is recognized at the northern boundary of the plain. If the fault zone activates, strong ground motion will hit whole the plain. To assess possible earthquake hazards, subsurface structure of the plain has to be revealed.

We conducted microtremor array measurements in the plain to investigate the S-wave velocity of the sediment layers and spatial variation of the bedrock depth. Four locations for the survey are chosen along the P-wave reflection survey line (Maruyama et al. 2017) and its extension toward south. Array aperture of the measurements at each location is set about 10 to 500 meters enabling to estimate the subsurface velocity structure down to about 1 km. Four velocity sensors (Tokyo sokushin, SE-321) are deployed at each array to compose equilateral array with a center point. Phase velocity of the Rayleigh wave are estimated using vertical component data of the microtremor by SAPC and V-method (Cho et al. 2004, Tada et al., 2007). The results will be shown.

Keywords: microtremor array survey, S-wave velocity structure, Saga plain