

## Microtremor array survey in Oita and Beppu area

YOSHIMI, Masayuki<sup>1\*</sup> ; HAYASHIDA, Takumi<sup>2</sup> ; TOKUMARU, Tetsuyoshi<sup>3</sup> ; SUGIYAMA, Takeshi<sup>4</sup>

<sup>1</sup>Geological survey of Japan, AIST, <sup>2</sup>IISEE, Building Research Institute, <sup>3</sup>Tokumaru Professional Engineer's office, <sup>4</sup>Free

We conducted microtremor array survey in Oita plain and Beppu area, Kyusyu, Japan, to estimate subsurface S-wave velocity structure. Each observation is comprised of six equilateral arrays, with aperture of 20 to 1000 meters. Velocity seismometers with natural period of 10 sec. are deployed connected with 24bit A/D, GPS time-calibrated data loggers to obtain night-long data. Each continuous data are segmented to hourly data sets, and are analyzed with SPAC method, V method (Tada et al,2007) and CCA method (Cho et al. 2006) to estimate phase velocity using BIDO 2.0 software (Tada et al, 2010, <http://staff.aist.go.jp/ikuo-chou>). We successfully obtained phase velocities in the frequency about 0.2 to 5 Hz.

1D S-wave velocity structure for each observation site is estimated using GA algorithm to fit observed phase velocity data.

This research is a part of "Research for Beppu-Haneyama Fault Zone" funded by MEXT.

Keywords: velocity structure, beppu sedimentary basin, ambient noise