

Seismic reflection survey in the Southern part of Sendai Plain

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Stress field of Northeast Japan arc was drastically changed due to the 2011 Off the Pacific Coast of Tohoku Earthquake. Inland earthquakes were triggered by this drastic stress field change. Our survey area is located on a junction Nagamachi-Rifu fault and Futaba fault, and active fault have never been distinguished clearly. In this study, we suggested concealed active fault beneath southern part of Sendai Plain, which is analyzed by air photo, 1m-DEM, and 2-DEM.

To reveal the subsurface structure of concealed active fault beneath the Sendai Plain, we carried out seismic reflection survey from January to February 2013. Seismic line has a length of 5.3 km and started from Takenohana Watari town to western edge of Watari bridge via Ookuma-jinguuji. The source used in this survey was a Enviro Vib (IVI Inc.). Sweep length was 16 sec and sweep frequency range beginning at 10 Hz up to 100 Hz. The receiver was GS-20DX (natural frequency, 10 Hz; Geospace Inc.). The source and receiver spacing was 10m, with 192 ch geophones used for each recording. We selected the Geode (Geometrics) for the recording system and its sampling rate is 1 msec.

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