

Research on active tectonics in central Japan based on integrated seismic experiments with long shot- and receiver-offsets

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【Outline of survey】

It is traditionally believed that active tectonics in central Japan has been controlled by the convergent movement between the North American and the Eurasian plates along the Itoigawa-Shizuoka Tectonic Line (ISTL). However recent accumulation of both geological and geophysical data requires us to reexamine the traditional idea and to establish the new one that the tectonics may be strongly related with the subducting Philippine Sea (PHS) Plate. In order to do so, we conduct 3 integrated seismic transects with long shot- and receiver-offsets in this survey: Across-central Japan, Southern margin of central Japan, and Across-Tsurugawan-Isewan Tectonic Line (TITL).

【Expected results】

1. Basic data sets for the research of active tectonics, such as configuration of PHS plate, relationship between the crustal structure and active faults, seismic velocities and their heterogeneities in the crust, are expected to be obtained and provided to academic communities.
2. New model on strain loading system in central Japan is expected to be proposed against two types of the well-established models: the loading system associated convergent plate boundary and that due to the structural inversion. This new model will be significant for the improvement of earthquake prediction studies.

【References by the principal investigator】

- Crustal structure of southwest Japan, revealed by the integrated seismic experiment Southwest Japan 2002 (Ito et al., 2008, in press)
- Active nappe with a high slip rate: seismic and gravity profiling across the southern part of the Itoigawa-Shizuoka Tectonic Line, central Japan (Ikeda, Ito, and others, 2008, in press)
- Gently N-dipping Median Tectonic Line(MTL) revealed by recent seismic reflection studies, southwest Japan (Ito et al., 1996, Tectonophysics, **264**, 51-63)

【Term of project】 FY2008—2010

【Budget allocation】

147,600,000 yen (direct cost)

【Homepage address】

<http://www-es.s.chiba-u.ac.jp/struct/site/struct.html>