

## Active structure of Ichinoseki-Ishikoshi Flexure

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There is Morioka-Shirakawa Tectonic line along the steep horizontal gradient zone of gravity anomaly, northeast Japan. 4 earthquakes (M6 or more) occurred in northern Miyagi Prefecture in last 150 years around this tectonic line. Some fold zones were formed in northern Miyagi Prefecture. It is important to understand the structure of the seismic source, because of Ichinoseki-Ishikoshi flexure that the subject of this study is a part of these fold zones. However, little study has been done to the relation between structure of Ichinoseki-Ishikoshi flexure and the seismic source. And, fault activity and fault structure has been little investigated. The purpose of this study is to investigate of the fault activity and fault structure.

As a result of examination geological structure from field survey, along Ichinoseki-Ishikoshi flexure limb, there was outcrop of Pliocene strata at dips range from 45 to 50 degrees to the east. Late Miocene to Pliocene strata on the west of the flexure was inclined to the west. Pliocene strata on the east of the flexure were inclined almost horizontal. Pliocene strata are composed of the Ariga, Yushima (Early Pliocene), Kazawa, and Mataka (Late Pliocene) Formations around Ichinoseki-Ishikoshi flexure. The strata covered with Pliocene strata were mainly Pre-Tertiary strata on the east side and Miocene strata on the west side in the verge as for the flexure. The result from this survey indicates that, there is normal fault under the Pliocene flexure formed with reverse faulting. Similar findings are inferred from seismic reflection profiling (Tashiro et al., 2009).

According to seismic reflection survey (Tashiro et al., 2009) and field survey in this study, the parallel folds were formed under the lower side of Kazawa Formation. And, the vertical displacement of the flexure was about around 150-200 meters, when based on the parallel folds. The vertical displacement of flexure was about around 10- 40 meters when based on the low relief surface on the hill. The results from this survey suggest that Ichinoseki-Ishikoshi flexure began moving after Kazawa Formation had been formed before low relief surface was formed, and the movement continued to Quaternary.