Geologic structure in the epicentral area of the 2008 Iwate-Miyagi Nairiku earthquake

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We performed geologic reconnaissance in the epicentral area of the 2008 Iwate-Miyagi Nairiku earthquake to understand the relation between geological structure and the seismogenic faulting. Geologic mapping reveals that the Miocene Maekawa and Orose Formation form a monoclinal flexure-thrust belt and a fold belt trending NNE-SSW in the epicentral area. The Miocene strata thrust over the terrace deposits at outcrops within the fold and thrust belts. The monoclinal flexures and thrusts may have been developed during formation of the major folds propagating from the reverse basement fault, which corresponds to the source fault responsible for the main shock.

Keywords: Iwate-Miyagi Nairiku earthquake, Fold, Monoclinal flexure, Source fault