

Active faulting and folding in the eastern Shinjo Basin revealed by seismic reflection profiling

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The active folding and late Quaternary basin-ward migration of thrusting of fault system in the eastern Shinjo Basin, central northern Honshu, is recorded in the morphotectonic features and geological successions. To reveal its mechanisms, the seismic reflection profiling was undertaken across the NS-trending fault system in the eastern Shinjo Basin. The seismic source was a Mini-vibrator truck, with 10 seconds of 10-80 Hz signals at 30 m intervals. The signal was recorded with 120 and 180 channels by a 15-m group interval of 10-Hz geophones. The seismic reflection profile reveals that the active folding has been formed by the movement of sub-horizontal ductile detachment in the Miocene mudstone which deposited during the post back-arc opening stage.