

High-resolution seismic reflection profiling across the Tsukioka fault, central Japan

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To understand the relationship between an active and seismogenic source fault is crucial for estimating seismic hazards. Along the western margin of the Echigo mountains, basin-ward dipping active faults are distributed. To obtain complete image of the active-seismogenic source fault system, we carried out the high-resolution seismic reflection profiling across the eastern margin of the Echigo plain for 8-km-long seismic line. Seismic data were acquired using a vibroseis truck (IVI, Y2400). The sweep signals (8-100Hz; reflection profiling) were recorded with fixed 812 channels deployed at 10 m intervals, off-line recorder (GSR, JGI MS2000). The seismic data were processed using conventional CMP-reflection methods. The obtained seismic section portrays the seismic image down to 2.5 km. The seismic section demonstrates a wedge-thrust system and the deeper extension of the Tsukioka fault merges to the deep-sited east-dipping thrust.