

P-wave seismic reflection profiling of the Ayasegawa fault

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The Kanto basin underlain by more than 3-km-thick Neogene sediments is currently deformed by several blind thrusts that will possibly generate hazardous earthquakes. The Ayasegawa fault locates about 20 km northwest of the Tokyo Metropolitan area, and thus evaluation of its precise location and slip rates is undoubtedly crucial for this reason. We obtained a new high-resolution, P-wave seismic profile across the topographic scarp on the late Pleistocene fluvial terrace hypothesized as formed above the Ayasegawa fault. The processed section explicitly shows that the topographic scarp is underlain by a monoclinical fold that deforms a 1.5-km section of Pliocene-middle Pleistocene sediments, suggestive of a southwest dipping blind thrust beneath it. Upper half section of the deformed strata pinches out onto the hangingwall, indicating structural growth of the monoclinical fold in the Pleistocene time. borehole transects that would resolve the structure of upper Pleistocene strata should be thoroughly sought.