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Structural characters of active faults in the Toyama sedimentary basin revealed by shallow to deep seismic profiling

ISHIYAMA, Tatsuya[1*] ; SATO, Hiroshi[1] ; KATO, Naoko[1]

[1]Earthquake Research Institute, University of Tokyo

We discuss about structural characters of crustal architectures around the Toyama trough and Toyama sedimentary basin to the south revealed by new seismic reflection and refraction profiles and seismic tomography, and active structures based on Neogene geology and tectonic geomorphology. As revealed by onshore offshore deep seismic reflection profiling across the Toyama trough and Toyama sedimentary basin, crustal architectures are characterized by three domains: (1) crustal thrust wedge comprising the northwestern flanks of the Hida Mountains, (2) Neogene sedimentary basin near the axis of the Toyama trough, and (3) reactivated normal faults as thrust (or obliquely slipping) faults along structural higher domain boundaries between Noto Peninsula and Toyama trough. These structural patterns, permanent, late Quaternary crustal deformation recorded by tectonic geomorphology, and their tectonic origins are quite similar to adjacent Neogene sedimentary basins in the backarc failed rifts in the Sea of Japan, including northern Fossa Magna, Niigata, and Akita sedimentary basins.