

Latest Pleistocene to Holocene activity of the Kakuda-Yahiko fault in the Niigata Plain, based on sediment core analysis

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The Kakuda-Yahiko fault is west-dipping reverse fault with the high slip rate along the western margin of the Niigata Plain. We obtained and analyzed three sediment core samples (GS-KNM-1; 154 m-length, GS-SGT-1; 84 m-length, and AK-1; 65 m-length: Urabe et al., 2004) crossing the fault, and the latest Pleistocene to Holocene vertical movement was determined on the basis of vertical correlation of sedimentological observation, radiocarbon ages, diatom assemblage.

Based on these analyses, the latest Pleistocene to Holocene sediments can be divided into eight sedimentary facies: meandering river sediments, salt to freshwater marsh sediments, offshore sediments, shoreface sediments, foreshore sediments, backshore sediments, modern river and dune sediments, in ascending order. The latest Pleistocene to Holocene sediment at the uplift side had been formed in shallower than upper shoreface.

The mean vertical-slip rate of this fault is estimated around 2.5 mm/yr based on the vertical-offsets and inclinations of the approximately 9 cal kyr BP initial flooding surface and the approximately 5 cal kyr BP Numazawa tephra horizon. This rate is not considered about compaction effects. However, it might be small, because the sediment of shallower than upper shoreface almost consists of coarser grains than fine sand size (Miyachi et al., 2009). It might be the minimal value of the fault, because the core at the uplift side obtained in the deformation zone.

Moreover, about 5 time repetition of the rootlets, bioturbation and shells abundance are recognized in the 13 to 9 cal kyr BP salt to freshwater marsh sediments. Base on the analysis of diatom assemblages, it would be suggested sedimentary environment changes between the supratidal zone and the intertidal to subtidal zones. This repetition may be formed associated with not only the changes of the deglacial sea-level and sedimentary supply but also fault related submergences.

Miyachi, Y., Nakanishi, T., Tanabe, S., Inazaki, T. (2009) Sediment density analysis of the drilled core near Kakuda-Yahiko Fault, western part of the Niigata City, central Japan. Quaternary research session (**Q145**) of this meeting.

Urabe, A., Takahama, N., Yabe, H. (2004) Identification and characterization of a subsided barrier island in the Holocene alluvial plain, Niigata, central Japan. *Quaternary International*, **115-116**, 93-104.