

Holocene activity of the northern part of Uemachi fault by S-wave seismic reflection and detailed arrayed boring survey

Kenichiro Miura[1], Futoshi Nanayama[1], Minoru Uchiumi[2], Moriaki Yasuhara[3], Yoshiharu Yokoyama[4], Yuichi Sugiyama[1], Naoko Kitada[5], Keiji Takemura[6]

[1] Active Fault Research Center, GSJ/AIST, [2] Kiso-Jiban Consultants Co., Ltd, [3] Dept. Biology and Geoscience, Osaka City Univ., [4] Earth Sci., Ibaraki Univ., [5] G.R.I., [6] Dept. Geophysics, Grad. Sci., Kyoto Univ.

<http://unit.aist.go.jp/actfault/activef.html>

We carried out S-wave seismic reflection survey and detailed boring survey of the northern part of Uemachi fault in Osaka city at river side of Shinyodo-gawa River to make clear of its Holocene activity.

S-wave seismic reflection survey carried out along the north bank of the Shinyodo-gawa River. The survey line was 790m in long. Both shot points and receiving points were set at 1m intervals and 120 receivers were used at each shot for receiving reflection data. The Uemachi fault was clearly shown as a flexure with a cumulative deformation pattern on the seismic reflection profile. This profile suggests that even the Holocene deposits are involved in the flexure deformation.

On the basis of the above results, we carried out detailed boring survey around of the Uemachi fault. Three cores, 38.5m, 37.0m and 37.8m, were obtained from the downthrown side, flexure zone, and upthrown sides of the fault. We have recognized more than 15 correlative horizons each of the three boring sites by detailed sedimentary facies analysis and measurement of physical properties such as magnetic susceptibility, density, pH, electric conductivity, pollen analysis and volcanic ash analysis. In this study, the most important horizon is the transgressive surface of Jomon transgression at 10,000 cal. yBP. Altitude difference of transgressive surface among three sites is ca. 2m. However, we could not say this altitude difference is an evidence of last earthquake event by Uemachi Fault.

In summary, other correlative horizons of Holocene deposits supported that Uemachi fault have no event since ca. 9,000 cal. yBP. A Holocene deformation on the seismic profile mentioned before was interpreted as progressive surface of prodelta.