

Liquefaction and slumping events found in Old-Edo river in Tokyo

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Geoslicer sampling of riverbed strata, single-channel reflection survey, and electric survey were carried out to understand the cause of ground fissure or rupture with vertical dislocation amounting to 25cm found beneath Old-Edo river in Tokyo (Shimazaki et al., 1998; Haraguchi et al., 1998). We conclude the fissure or rupture was caused by gravity slumping eased by liquefaction taking place near a paleo-valley running across the Old-Edo river found by the reflection survey. The electric survey shows high-conducting material 10m beneath the site, which might be a water-rich layer related to the liquefaction. At least two liquefaction and slumping events, probably corresponding to two large earthquakes, are identified. At present their ages are not well constrained: one after 1800yBP, and another at 2900-3700yBP.