

Estimating amount of uplift during the AD1707 Hiei earthquake from historical and geological evidences in eastern Enshu-nada coast

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Historical records indicate that a large coastal uplift occurred during the AD 1707 Hiei earthquake ($M=8.6$) along the eastern coast of the Enshu-nada, Shizuoka Prefecture, central Japan. According to the analyses of written record and comparison of old pictures across the earthquake, rapid geomorphic change occurred around a domestic trading port, Yokosuka-minato, located in this area. The geomorphic change indicates a large uplift along the coastal area.

Over 80 cores excavated from the site of emerged port, nowadays paddy field of 1 to 1.8 m high, using geo-slicer and hand corer revealed the depositional facies change showing a rapid uplift of the coastal area (Fujiwara et al., 2007, Fujiwara et al., in press). The facies change shows environmental change from a lagoon or inlet to marsh. Reconstructed former shoreline, indicating the sea-level before the 1707 earthquake, is distributed around the height of 1.4 m or higher level. Geological evidence indicates that accumulated coastal uplift has amounted to at least 1.4 m since the 1707 earthquake. This uplift amount involves coseismic and interseismic crustal movements, including the AD1854 Ansei Tokai earthquake.

Fault models of large uplift observed in the study area will be discussed by Kumagai et al. in 2009 meeting of Japan Geoscience Union.

Fujiwara, O. et al., (2007) Annual report on active fault and paleoearthquake researches, No.7, 157-171. Fujiwara, O. et al. (in press) Chikyū Monthly