

## Activity of Fujikawa-kako fault zone inferred from submergence history of Ukishimagahara lowland, southwestern Japan

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Massive clay layers enclosed in peat were found in the subsurface successions of the Ukishimagahara lowland, the coastal marsh area, which is east to, and on a down thrown of the Fujikawa-kako fault zone, based on a hand corer sampling on 14 sites up to 5 m deep. Sharp lithofacies boundaries may indicate sudden submergence events related with activities of the fault zone.

The Fujikawa-kako fault zone is thought to the inland extension of the Nankai Trough, with a large displacement rate (over 7 m / 1000 yrs). But recent activities are not clear due to lack of evidence. To find geological records of fault activities, subsurface stratigraphy in the Ukishimagahara lowland was investigated.

The fact that Holocene beneath the lowland was known to become thicker near the fault zone suggest that the lowland is located on the down thrown. Blue gray clay layers observed in subsurface successions 3 - 6 m deep only in the western area of the lowland may imply an increase in water depth caused by the fault displacement.

14 sites were investigated by a hand corer up to 5 m deep, and 7 - 80 cm thick blue gray to gray clay layers were found enclosed by peat on 8 sites. They are entirely massive, never include coarser grains, accompanied with sharp basal boundaries and plant fragments sometimes on it. One to three scoria layers (Obuchi Scoria) were also found above and below the clay horizon.

Depositional ages of clay layers are divided into at least two groups, before 2500 cal yBP and after 4th century, based on calibrated <sup>14</sup>C ages measured by plant fragments and seeds in clay, scoria and peat.

It is unclear whether the lower clay layer suggests submergence event or not, because the corer did not reach the basal boundary. In contrast, the upper clay layers are likely to represent submergence events and subsequent westward tilting of the lowland caused by the Fujikawa-kako fault zone, because they are distributed only in the western part of the lowland, and deeper westward. The record in 4th century is much older than oldest historical earthquake (AD 1498 Meio). Submergence history of the Ukishimagahara lowland is discussed in detail based on supplementary age data.