

On the pre-slip of the 1946 Nankai earthquake –verification by the tide level data –

*Yasuhiro Umeda¹, Satoshi Itaba¹

1. Advanced Industrial Science and Technology

Well water in the coastal area of the Pacific Ocean remarkably decreased before the 1946 Nankai earthquake. Umeda and Itaba (2017) proposed a pre-slip model before the earthquake. The model was verified by the tide level data of Tosashimizu and Uwajima. Fig. 1 shows the difference of sea level anomaly at two observation points (upper solid line) and the 24 hour moving average (dotted line). 9 days before the earthquake, relative change (uplift of Tosashimizu and subsidence of Uwajima) was found on the Fig. 1. It coincides with one week before when the well water decreases. Atmospheric pressure at this time was stable as shown in Fig. 1. There is no contradiction between the change amount of 12 hours obtained from observation and that estimated from the model. However, this level of tidal change can be seen in the other period (from October to December), so it is not necessarily meaningful. Amplitudes of half-day and daily cycles are due to the observed tide level being smaller than the astronomical tide level.

Keywords: 1946 Nankai earthquake, pre-slip, well water, tide, Tosashimizu

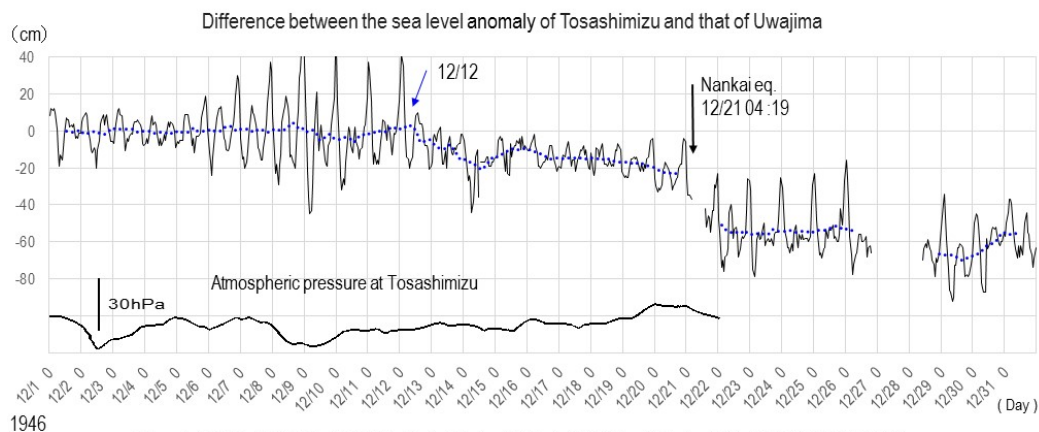


図1. 土佐清水の潮位偏差と宇和島のそれとの差(上の実線). 青色の点線は24時間の移動平均. 青矢印を付けた12月12日頃から宇和島に対する土佐清水の潮位が相対的に下がっている. (土佐清水の土地が隆起, 宇和島が沈降に対応). 下の実線は土佐清水の気圧(小林, 2013)

Fig. 1 Difference of sea level anomaly at Tosashimizu and Uwajima (upper solid line), and 24 hour moving average (blue dotted line). Lower solid line shows the atmospheric pressure at Tosashimizu (after Kobayashi 2013).