

The pre-slip of the 1944 Tonankai Earthquake estimated from the leveling just before the earthquake

Kazutomo Takano[1], Fumiaki Kimata[2], Masataka Ando[3]

[1] Graduate School of Environmental Studies, Nagoya Univ., [2] Res. Center Seis. & Volcanology, School of Sci., Nagoya Univ., [3] RCSV, Science, Nagoya Univ.

At the time of the M 7.9 1944 Tonankai earthquake, a precise leveling survey was carried out by a survey crew near Kakegawa about 70 km east of the focal region. The survey crew memorized leveling data and also logs notes in detail. Sato (1970) and Mogi (1982) analyzed these data and estimated a slow tilt of 1.3 seconds occurred preceding to the earthquake, and some postseismic deformation followed it. We carefully reanalyzed their data and also checked the sensitivity of the same level that was used at the survey in 1944. From these we concluded the slow titling with a total amount of 10 micro radian started 1 to 10 min preceding to the earthquake. This estimation is almost equivalent to the tilt estimated from the two leveling surveys before and after the earthquake. It can interpret in terms of preseismic slip with and amount of 1m on a fault of 50x90 km, which occurred beneath the survey area starting about 1 to 10 min before the earthquake.