

## Detectability estimation of water-level and strain anomalies at new wells due to a hypothetical preslip of Tonankai earthquake

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Two groundwater and strain observation wells will be constructed by National Institute of Advanced Science and Industrial Technology (AIST) in FY2006 at southern Wakayama prefecture. Detectabilities of groundwater level and strain anomalies at the new observation wells associated with hypothetical preslip around the rupture start point of 1944 Tonankai earthquake and hypothetical M5.5 slow slip around epicenters of the non-volcanic tremors in southern Wakayama prefecture are estimated by assuming locations of the wells and noise levels of multi-component strainmeters and the strain-converted groundwater levels. We used the support software for estimation of interplate slip HITEQ (Nakamura and Takenaka, 2005) and MICAP-G (Naito and Yoshikawa, 1999) to estimate strain fields associated with the preslip and the slow slip. We assume the noise levels of 24-hour difference of multi-component borehole strainmeter and strain-converted groundwater level are  $3 \times 10^{-8}$  and  $5 \times 10^{-8}$ , respectively.

We expect to detect strain anomalies more than the noise level at the multi-component strainmeters 20 - 35 km away from the M5.5 hypothetical preslip at the rupture start point of 1944 Tonankai earthquake. We would also observe groundwater-level anomalies more than the noise level around Hongu and Shingu associated with the M5.5 hypothetical preslip.

If M5.5 slow slips are occurred around non-volcanic tremors in the Kii peninsula, we can detect strain anomalies associated with the some of slow slips at new observation wells around Nachi-Katsuura, Shingu, Hongu or Kumano.