Japan Geoscience Union Meeting 2011
(May 22-27 2011 at Makuhari, Chiba, Japan)

SCG058-P09 Room:Convention Hall Time:May 23 10:30-13:00

Ground deformations observed at around the active area of low frequency earthquakes in Kii Peninsula

Kensuke Onoue[2*], Yoshinobu Hoso[1], Fumio Ohya[2], Wataru Morii[1], Yasuyoshi Fujita[1]

[1]DPRI, Kyoto Univ., [2]no

It has been reported lately that an activity of deep low frequency earthquakes occurred in southwestern Japan many times. Characteristic tilting motions synchronized with an activity of low frequency earthquakes and short term slow slip events in many regions were reported by analyzed data of tilt-meters attached to Hi-net by Natural Research Institute for Earth Science and Disaster Prevention. Same results by analyzing data of borehole strain-meters at Tokai region and others were reported by Japan Meteorological agency. It was known that active zone of deep low frequency earthquakes was formed along north-east and south-west direction through central Mie, south Nara and central Wakayama Prefectures in Kii Peninsula. We have carried out continuous observations of ground deformations at three observation sites, that is, Donzurubo site(135.67E,34.53N), Kishu site(135.89E,33.76N) and Nakaheji site(135.64E,33.83N) closed to active zone of deep low frequency at Kii Peninsula. Ground deformations tend to be affected by meteorological condition caused by horizontal vaults with shallow depth from ground surface compare with borehole strain-meters. However, we could find the strain changes synchronized with activity of low frequency earthquakes and short term slow slip events into the records of three sites. As one of them, we obtained strain changes synchronized with activity of low frequency earthquakes of source distance with 30˜40km from November 12, 2010 for 3 days at Kishu site. At Donzurubo site of souce distance with about 70km, strain changes indicated slow and long period of about 10 days. It will be suggested that a short term slow slip event happened in this area. We examined strain changes related to activity of low frequency earthquakes about past records of these sites.

Keywords: ground deformtion, strain, Kii peninsula, low frequency earthquake, souce distance, strain-meter