

Seismicity and pressure changes observed around DONET at the same time

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The Philippine Sea plate is subducting to northwest below the Eurasian plate along the Nankai trough in southwestern Japan at a convergence rate of about 65 mm/year. In this region mega-thrust earthquakes have repeatedly occurred along the Nankai trough and caused serious and widespread damages in central and western Japan. The Japan Agency for Marine-Earth Science and Technology (JAMSTEC) installed permanent ocean bottom observation stations named as Dense Oceanfloor Network System for Earthquakes and Tsunamis (DONET) off the Kii Peninsula to monitor earthquakes and tsunamis and to decrease damage due to those. Because several kinds of continuous data have sent to JAMSTEC in real time, we can discuss continuous seismicity and other seismic/geodetic information. It is important for considering occurrence of large earthquakes to judge seismicity of small earthquake and to monitor crustal deformation.

Suzuki et al. (2013) has reported that quiescence of seismicity and ocean bottom pressure changes around DONET have occurred almost at same time from Feb. 2013 to Sep. 2013. In this study we extended observational period until Jan. 2014. As a result of investigation by using similar method with Suzuki et al. (2013), these changes seem to have continued after Sep. 2013. Quiescence of seismicity has not finished yet; seismicity is lower than one predicted from ETAS model (Ogata, 1989) represented by five parameters fitted by using data between 2012. Although pressure changes have been observed at only three stations (KMB05, KMB06 and KMB07) on Sep. 2013, pressure change at KMB08 was also observed on extended time series in addition to the three stations. We will try to estimate fault slip model that can cause these pressure changes and investigate how that fault slip influence to seismicity.

Keywords: seismicity, ocean bottom pressure gauge, DONET, ETAS model