

Seafloor geodetic observation along the Nankai Trough - Progress report after the 2011 Tohoku-oki earthquake -

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We have been carrying out GPS/acoustic seafloor geodetic observation on the landward slope of the major trenches around Japan, such as the Japan Trench and the Nankai Trough. From the past observations, we detected intraplate deformation caused by the subduction of oceanic plates and coseismic displacements associated with large earthquakes.

Along the Nankai Trough, we deployed six seafloor reference points in the sea area from off-Omae-zaki through off-Muroto in 2002-2004 and had been carrying out campaign observations. From the observations conducted before the 2011 Tohoku-oki earthquake, we obtained the intraplate velocities of 2-5 cm/year toward WNW, which were generally consistent with those detected by on-land GPS measurements. A closer look gives us the differences of the velocities by sea areas.

Furthermore, to monitor seafloor movement spatially in the whole expected focal regions along the Nankai Trough, we deployed nine new seafloor reference points mainly off Shikoku in January 2012. If we obtain crustal velocities at all the site, it is expected that a spatial variation of interplate coupling will be revealed in the sea area along the Nankai Trough. It has been two years after the expansion of seafloor reference points and seafloor movements westward and northward are being observed at most of the sites.

In this report, we present a progress report on seafloor geodetic observation along the Nankai Trough after the 2011 Tohoku-oki earthquake.

Keywords: Seafloor geodetic observation, Seafloor geodesy, Nankai Trough