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南西諸島北部における GPS 連続観測
Continuous GPS observation in northern part of Nansei Islands

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GEONET, which is a nationwide GPS observation in Japan cover on all over Japan. However, there is a GEONET site in Toshima-mura which is located in northern part of Nansei Islands. This region is defined the boundary between Northern and Central part of Ryukyu arc (Nishimura et al., 2004). It is not clear that where is the boundary because there is almost no GPS site. Goto (2013) concluded that the great earthquake occurred in 1911 is the interpolate event in this region. We set up the continuous GPS in islands of this region due to observe crustal deformation in this region.

In Akuseki Island (AKSK), Takarajima (TAKR) and Kuchinoshima (KCHI), continuous GPS (CGPS) observation started in March 2007, July 2007 and September 2010, respectively. CGPS set up on Gajyajima (GJYA) and Ujishima (UJIS), where is a deserted island, in May 2009. CGPS in Yokoatejima (YKAT) started in September 2013. Data is recorded at CGPS sites. Electric power system at GJYA, UJIS and YKAT is composed of batteries and photovoltaic cells.

Bernese GPS Software ver. 5.0 are used with IGS precise ephemerides and IERS rotation parameters. We also estimated tropospheric delays every hour and their horizontal gradients every six hours.

The short-term repeatabilites are from 1.6 to 3.0 mm in horizontal component and from 6.5 to 7.9 mm in vertical components. These observation is expected to make contribution to resolve rigid movement and crustal deformation in this region.