Post-seismic deformation of 2016 Kumamoto Earthquake by continuous GNSS network (3)

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GNSS observation is ongoing in Kumamoto district to observe post-seismic deformation of 2016 Kumamoto Earthquake. We set up newly twenty continuous GNSS sites until April 30, 2016. Kyushu Univ., Kyoto Univ. and Kagoshima Univ. operate fifteen continuous GNSS sites before the earthquake. Daily coordinates of these sites are estimated by Bernese GNSS Software Ver. 5.2 with CODE precise orbit. ITRF2014 coordinate system is used. In our daily analysis, GEONET data by GSI and data at continuous GNSS sites in active volcanoes by JMA are also used. A dense continuous GNSS network is constructed.

To emphasize post-seismic deformation, trend at each site is removed. Trend is estimated by least squared method by using between 2004 to 2015. For GNSS sites occupied after the earthquake trend is interpolated by using trend at three neighbor sites.

Post-seismic deformation with large deformation is observed at sites which is located in the eastern side of Hinagu faults. Especially amount of deformation in NS component is large. Largest deformation is 13.5cm in the period from April, 2016 to December 2018 at MIFN. In EW component change in deformation occurred in January 2017. Velocity becomes smaller. In these sites post-seismic deformation is continuous at the moment.

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