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稠密 GPS 観測に基づく 2011 年東北地方太平洋沖地震の地震時・地震後地殻変動
Detailed deformation associated with the 2011 off Pacific coast of Tohoku earthquake from a dense regional GPS network

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Our original continuous GPS network, which consists of 60 sites, observed large coseismic displacement field due to the 2011 off Pacific coast of Tohoku earthquake, Japan. Two nearest GPS sites from the epicenter recorded 5.6m of horizontal displacement directing ESE, and 1.2m of subsidence from both static daily coordinate analysis and high-rate kinematic precise point positioning (PPP) analysis. This is the largest value among whole GPS sites in Japan. The high-rate kinematic PPP results clearly suggest the coseismic rupture characteristics. Static coseismic displacement field, which is estimated form with our GPS network and GEONET, shows E˜ESE directing horizontal displacement, and subsidence along the mainly coastline. The simple rectangular fault model on the plate interface approximately explains the data well. Our original GPS network has been revived and accumulating data after the mainshock. These data will provide us important information to understand the postseismic deformation process and the earthquake cycle process at this region.