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Crustal Deformation and Fault Model of The 2011 off the Pacific coast of Tohoku Earthquake

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The 2011 off the Pacific coast of Tohoku Earthquake caused large crustal deformation of the Japanese Islands, observed by a permanent GPS array "GEONET" and ALOS PALSAR. The maximum horizontal displacement reaches 5.3 m in the Oshika Peninsula along the Pacific coast of northeastern Japan. It is the largest coseismic displacement measured by GEONET since 1994. The subsidence up to 1.2 m was observed in the Pacific coastal area. The postseismic displacement exceeds 0.4 m in one month after the earthquake. We estimated the distribution of the coseismic and the postseismic slip on the subducting Pacific plate from the GPS data.

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Keywords: crustal deformation, fault model, GEONET, postseismic displacement, sea-floor crustal deformation