

A correction of crustal movement caused by earthquakes for geodetic datum

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The Geographical Survey Institute has published coordinates of national geodetic control points (Japanese Geodetic Datum 2000) since April, 2002. The datum is based on the International Terrestrial Reference Frame 1994 at epoch 1st, January, 1997. Therefore, the datum has to be corrected if an earthquake deteriorates its relative accuracy. In order to correct such earthquake-induced variations, we have carried out GPS observations on the control points in an area with a large coseismic strain change (roughly more than 2 ppm). If the crustal variation in the area is not smooth in space, we have to resurvey all the points including lower-order triangulation points. On the contrary, if the variation is sufficiently smooth, we can interpolate observed displacements at higher-order ones. In this presentation, we apply several interpolation algorithms to crustal movement caused by recent earthquakes and discuss their validity.