

## GPS Terrestrial Reference Frame ITRF94 and ITRF96 in Japan

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ITRF 96 coordinate system has improved the accuracy and consistency of the coordinates and velocities of the IGS sites in the Eastern Asia and the Western Pacific significantly comparing with ITRF 94. The discrepancy of the coordinates of ITRF 94 and 96 at the Tsukuba and Usuda IGS sites in Japan are  $d(\text{LAT}) = 58$  mm and 40 mm,  $d(\text{LONG}) = 20$  mm and 5 mm, and  $d(\text{RADIUS}) = 32$  mm and 15 mm respectively at the epoch 1997.0, although those at the Wetzell and Algonquin IGS sites are  $d(\text{LAT}) = -4$  mm and  $-8$  mm,  $d(\text{LONG}) = -3$  mm and  $-6$  mm, and  $d(\text{RADIUS}) = -7$  mm and 18 mm respectively. In the analysis by NIED, the discrepancy of the GEONET site 3081 between the ITRF94 and 96 frames is  $d(\text{LAT}) = -19$  mm,  $d(\text{LONG}) = 6$  mm, and  $d(\text{RADIUS}) = -5$  mm, showing less deviation even applying ITRF94 reference frame.

ITRF 96 coordinate system has improved the accuracy and consistency of the coordinates and velocities of the IGS sites in the Eastern Asia and the Western Pacific significantly comparing with ITRF 94. The discrepancy of the coordinates of ITRF 94 and 96 at the Tsukuba and Usuda IGS sites in Central Japan are  $d(\text{LAT}) = 58$  mm and 40 mm,  $d(\text{LONG}) = 20$  mm and 5 mm, and  $d(\text{RADIUS}) = 32$  mm and 15 mm respectively at the moment of 1997.0, although those at the Wetzell and Algonquin IGS sites are  $d(\text{LAT}) = -4$  mm and  $-8$  mm,  $d(\text{LONG}) = -3$  mm and  $-6$  mm, and  $d(\text{RADIUS}) = -7$  mm and 18 mm respectively. ITRF 96 GPS station table denotes the coordinates and velocities of six additional IGS sites in the Eastern Asia and the Western Pacific area. We analyze the GPS fixed-point networks in Central Japan, including five semi-global IGS sites and connected with the solutions of the global IGS network analysis by the SIO. The discrepancy of the GEONET site 3081 between the ITRF94 and 96 frames is  $d(\text{LAT}) = -19$  mm,  $d(\text{LONG}) = 6$  mm, and  $d(\text{RADIUS}) = -5$  mm, showing less deviation even applying ITRF94 reference frame.