

Scattering of Reanalysis Daily Solutions of the GEONET GPS Site Coordinates and Baseline Length Changes

Hiroshi Takiguchi[1], Yoichi Fukuda[2]

[1] Dep.Geophysics,Kyoto Univ., [2] Geophysics, Kyoto Univ.

In late 2001, GSI (Geographical Survey Institute of Japan) has re-analyzed the GEONET (GPS Earth Observation NETwork) data with new strategies (Hatanaka et al., 2001) after the investigation of the scatter of the GPS site coordinates and baseline length changes using the old GEONET data (Takiguchi and Fukuda, 2001) In this study, therefore, we re-investigated the scatter using the new daily solutions of GEONET data.

The characteristics of the old solutions are summarized as follows:

1. The standard deviation of the baseline length changes, which were small in winter (about 2mm) and large in summer (about 5mm), clearly showed seasonal variations.
2. The average standard deviations of the ellipsoidal height changes at ID 94xxx sites were larger than other sites.
3. The standard deviations were large in western Japan compared with eastern Japan.
4. Regional dependence of the standard deviations as recognized in the sites using Trimble receivers.

The scatter of reanalysis daily solutions is about 75% smaller than the previous one. Moreover, as described in Hatanaka et al., (2001), the errors due to the combination of different type antennas are also decreased. However the seasonal variations of scattering, and the regional dependence of the standard deviations are still recognized, in the new daily solutions, even though the amounts of the variations are significantly decreased.