

Verification of Ionospheric Disturbance using Global Positioning System for the 1995 Hyogo-ken Nanbu Earthquake

Issei Suganuma[1], Nobuhiro Isezaki[2], Takeshi Akasaka[3]

[1] Earth Sci., Chiba Univ., [2] Dep. Earth Sci, Chiba Univ., [3] Life and Earth, Sci&Tech, Chiba Univ

<http://www-es.s.chiba-u.ac.jp/geoph/geoph.html>

Because there are some reports related with electromagnetic phenomena measured at the ground before and after the 1995 Hyogo-ken Nanbu earthquake, it is supposable that this earthquake affected the ionosphere.

Then, in this study we verified whether ionospheric perturbations affected by this earthquake were detected or not by GPS measurement, which provides us the Total Electron Content (TEC) in the ionosphere.

As for a short period component of the TEC variation, we noticed strong amplitude signals for each station before the earthquake. We checked spatial and temporal relations of each peak for these strong signals, then the peaks moved from east to west with a speed of approximately 250 m/sec or more. These moving signals seemed to be Traveling Ionospheric Disturbances (TIDs).