

GNSS ionospheric anomalies following recent big earthquakes: Results and statistical analysis

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Up to now, it is still difficult to well understand and predict Earthquake from traditional seismometer and space geodetic deformation measurements. Ionospheric disturbances following the earthquake may provide new insights. In this paper, GNSS seismo-ionospheric anomalies are presented following recent bigger earthquakes, e.g., 2008 Mw 8.0 Wenchuan (China) earthquake, 2011 Mw 9.1 Tohoku (Japan) Earthquake and 2011 Mw 7.2 Van (Turkey) earthquake. Significant pre-seismic, co-seismic and post-seismic ionospheric disturbances are observed with about 0.2~0.5TECU from continuous GPS measurements. Furthermore, different seismo-ionospheric behaviors and patterns are presented and discussed as well as statistic analysis.

Keywords: Seismo-ionosphere, TEC, Earthquake, GNSS