Japan Geoscience Union Meeting 2013
(May 19-24 2013 at Makuhari, Chiba, Japan)

PEM29-P09 会場:コンベンションホール 時間:5 月 22 日 18:15-19:30

2011 年東北地震による地殻表面波と電離圏 TEC 擾乱の関係
Causal link of the seismic surface waves in the lithosphere and TEC perturbation in the ionosphere during the 2011 Tohok

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1Hz ground-based Global Positioning System (GPS) measurements from the Japan GOENT and Taiwan CWB are used to study the 2011 Mw 9.0 Tohoku earthquake at 05:46:23 UT on March 11, 2011. The high-rate GPS measurements can provide more detail information on the seismic fault of the earthquake. In this study, the propagation of seismic surface waves and ionospheric total electron content (TEC) perturbations generated by the Tohoku earthquake as well as their relationship are investigated by using the high-rate GPS measurements. It is found that the seismic surface waves and the initial ionospheric disturbances can transport from Japan to Taiwan. Results further found that there are time delay and deflection angle between the surface waves and the ionospheric disturbances when the earthquake waves transported from Japan to Taiwan. These results can help us to speculate the propagation path of the acoustic wave from the lithosphere to the ionosphere.