

Seismo-Traveling Ionospheric Disturbances Triggered by the 2011 Tohoku Earthquake Observed by FORMOSAT-3/COSMIC

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Seismo-traveling ionospheric disturbances (STIDs), triggered by the 11 March 2011 M9.0 Tohoku earthquake, were simultaneously observed by total electron content (TEC) derived from ground-based receivers of GPS in Taiwan and Japan, as well as ionospheric electron density profiles of FORMOSAT-3/COSMIC (F3/C). It is found that the Abel inversion acts as a low-pass filter. The period and wavelength of the STIDs in the vertical direction probed by radio occultation (RO) are 3-5 minutes and 100-200 km, respectively. This is for the first time that the STIDs in the vertical direction are reported. Disturbances in both troposphere and ionosphere probed by RO of F3/C during the earthquake will be presented and discussed.