Causal mechanisms of Seismo-ionospheric Precursors and Ionospheric Storms Probed by FORMOSAT-5/AIP

Jann-Yenq Liu (1,2,3), Fu-Yuan Chang (1,2), Chi-Kuang Chao (1,2)

(1) Graduate Institute of Space Science, National Central University, Taoyuan, Taiwan, (2) Center for Astronautical Physics and Engineering, National Central University, Taoyuan, Taiwan, (3) Center for Space and Remote Sensing Research, National Central University, Taoyuan, Taiwan

This study goal is to combine in situ plasma measurements of F5/AIP (FORMOSAT-5/advanced ionospheric probe) and remote sensings of the TEC (total electron content) in the of the global ionosphere map (GIM) derived from ground-based GNSS (global navigation satellite system) receivers to three-dimensionally study seismo-ionospheric precursors (SIPs) of the 12 November 2017 M7.3 Iran-Iraq Border Earthquake and disturbances of ionospheric storms on 1 and 21 November 2017. The F5/AIP ion density is used to confirm the SIP signatures and storm signatures observed by the GIM TEC, while the F5/AIP ion velocity is employed to find the causal mechanisms of the SIPs and the ionospheric storms.