

## **Global Distribution of Ionosphere and Plasmasphere Observed by the FORMOSAT-3/COSMIC Satellites**

**Ho-Fang Tsai**<sup>1</sup>, Tiffany Ho<sup>2</sup>, Cheng-Yung Huang<sup>1</sup>, Jann-Yenq Liu<sup>3,4</sup>

<sup>1</sup>*GPS Science and Application Research Center, National Central University, Taiwan.*

<sup>2</sup>*Taiwan Analysis Center for COSMIC (TACC), Central Weather Bureau, Taiwan.*

<sup>3</sup>*Institute of Space Science, National Central University, Taiwan.*

<sup>4</sup>*National Space Organization, Taiwan.*

hftsai@ncu.edu.tw

The traditional global ionosphere map (GIM) provides a series of “snapshots” of the total electron content (TEC), which blends with a part of the plasmasphere. The use of the FORMOSAT-3/COSMIC (F3/C) radio-occultation (RO) and non-RO data provides an opportunity to study the ionosphere and plasmasphere individually. The global plasmasphere map (GPM) constructed from the F3/C non-RO absolute TEC shows the structure and motion of the plasmasphere, while the redefined GIM blended with F3/C RO data and the plasmasphere-free ground GPS data shows the global ionospheric content below 800 km altitude. The ionosphere and plasmasphere monitoring also reveal the interaction between them.