

# **Longitudinal structure of the equatorial ionosphere observed by FORMOSAT-3/COSMIC**

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## **Abstract**

Six FORMOSAT-3/COSMIC (Constellation Observing System for Meteorology Ionosphere and Climate) satellites were launched into a low earth orbit at 518 km at 0140 UTC on 15 April 2006. The six satellites will be placed into six different orbits with 30 degrees separation in longitude at 800 km mission orbit and covers the entire global ionosphere, providing over 2,500 sounding data per day. The main payload of the satellite, GOX (Global Positioning Satellite Occultation Experiment), observes the ionosphere between 90 km and 800 km while the occultation line of sight from GPS passes through the ionosphere. The effect of the atmospheric tides to the longitudinal structure of the equatorial ionosphere is observed by the F3/C constellation in around September Equinox, 2006, near solar minimum condition. The global three-dimensional ionospheric electron density observed by F3/C shows a prominent four-peaked wave-like longitudinal structure of the stronger equatorial ionization anomaly (EIA) regions. The development and propagation of the wave-like structure observed will be presented.