

An observation on global plasma density distributions and equatorial plasma irregularities observed by FORMOSAT-5/AIP during in-orbit checkout

*Yi-Wun Chen¹, Chi-Kuang Chao¹

1. Graduate Institute of Space Science, National Central University, Taiwan

A remote sensing satellite, FORMOSAT-5, was launched in a circular sun-synchronous orbit at 740 km altitude on 25 August 2017 CST and carried a science payload, Advanced Ionospheric Payload (AIP), to measure ionospheric plasma characteristics, like density, velocity, and temperature. The first AIP measurement was performed on 7 September 2017 and obtained the first-orbit data in the night-side. After near three-month in-orbit check, AIP operation was finalized to maximize useful science data. In this poster, ion density measurement will be used to depict global plasma density distributions and discover equatorial plasma irregularities which are resulted from nonlinear evolution of Rayleigh-Taylor instability in the postsunset ionosphere near magnetic equator.

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