

# Global Plasma Density Irregularity Distributions Observed by Advanced Ionospheric Probe Onboard FORMOSAT-5 Satellite

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A FORMOSAT-5 satellite has been launched on 25 August 2017 CST into a 98.28° inclination sun-synchronous circular orbit at 720 km altitude along the 1030/2230 local time sectors. The orbital coverage provides a great opportunity to survey terrestrial ionosphere from equatorial to polar region every two days. Advanced Ionospheric Probe (AIP) is a piggyback science payload developed by National Central University for the FORMOSAT-5 satellite to measure ionospheric plasma concentrations, velocities, and temperatures. It is also capable of measuring ionospheric plasma density irregularities at a sample rate up to 8,192 Hz over a wide range of spatial scales. In this presentation/poster, distributions and structures of pre-midnight low-latitude ionospheric plasma density irregularities will be shown from AIP science data collected since winter 2017. Especially, seasonal variations of the distributions will be compared with ROCSAT-1/Ionospheric Plasma and Electrodynamics Instrument dataset (1999-2004) to understand their trends. Meanwhile, high resolution data measured at a BURST rate (8,192 Hz) in some longitudinal sectors with high plasma density irregularity occurrence rates will also be investigated by spectral analysis to understand their characteristics.

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