

Technical Page

Proposal Type: Regular
 General Category: Terrestrial Aeronomy
 Sub-Category: Radar
 Observation Category: Thermosphere
 Total Time Requested: 24 Hours
 Minimum Useful Time:

Proposal Title: Investigation of quasi-periodic structures in the F region and their mapping to the E region of ionosphere

ABSTRACT:

Apparent Medium Scale Travelling Ionospheric Disturbances (MSTID) wave structures of around 1 hour period are seen to be nearly continuously present in Incoherent Scatter Radar (ISR) power profiles at Arecibo Observatory (AO) [Livneh et al., 2009]. We propose to investigate the manifestation of $\tilde{1}$ hour quasi-periodic structures observed in the F region using ISR and optical instruments at Arecibo. The investigation requires the simultaneous measurements of electron concentration in E and F region of ionosphere, lidar metal concentration, and airglow imaging observations using 630.0 and 557.7 nm airglow emission. We request two 12 hour overnight observing runs during moonless and clear sky nights.

Name	Institution	E-mail	Phone	Student
Sumanta Sarkhel	The Pennsylvania State University	sus54@psu.edu		no

Remote Observing Request

- Observer will travel to AO
- Remote Observing
- In Absentia (instructions to operator)

Instrument Setup

430 CH radar

Atmospheric Observation Instruments:

Tilt-Photometer Spectrophotometer Fabry-Perot Lidar

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned