

Technical Page

This proposal has not been submitted before.

Proposal Type: Regular
 General Category: Terrestrial Aeronomy
 Sub-Category: Radar
 Observation Category: Thermosphere
 Total Time Requested: 48 Hours
 Minimum Useful Time: 4

Proposal Title: Connecting E- and F-layer irregularity phenomenology using the Arecibo ISR and the surrounding instrument cluster

ABSTRACT:

We propose to observe sporadic E layers, irregularities in the layers, F-layer irregularities (MSTIDs, midlatitude spread F), and contextual parameters throughout the E and F region over Arecibo in postsunset summer hours using the Arecibo incoherent scatter radar and associated imagers and resonance lidar. Estimates of wind profiles in the lower thermosphere will be formulated in subsequent analyses. The goal is to assess the connection between E- and F-region irregularities and the causal role of neutral thermospheric dynamics. The radar should be operated in dual-beam mode using a combination of maximal length coded pulses, MRACF pulses, and coded long pulses, similar to what is used for World Day mode. Additional experiments involving double maximal length codes may also be used. The experiments will be supported by a coherent scatter radar on St. Croix.

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Remote Observing Request

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

Instrument Setup

430 Xmit

Atmospheric Observation Instruments:

Ionosonde Lidar

Description of Observer Equipment: We will use the St. Croix radar. The BU imager should also be operating.

Special Equipment or setup: The operation of a resonance lidar (any wavelength) would be welcomed.

RFI Considerations

Frequency Ranges Planned