

Technical Page

This proposal has not been submitted before.

Proposal Type: Director Discretionary Time
 General Category: Terrestrial Aeronomy
 Observation Category: Thermosphere
 Total Time Requested: 40 Hours
 Minimum Useful Time: 4 hrs

Proposal Title: Investigating topside plasma turbulence in the midlatitude E and F regions with Arecibo and supporting instruments

ABSTRACT:

This proposal builds on a recent study identifying anomalous structuring in the topside ionosphere associated with a period of midlatitude spread F. We propose here to make further observations of midlatitude spread F and associated phenomena. For the new experiments, we propose to run the coded long pulse (CLP) experiment on the 430-MHz radar using the Gregorian feed pointed in the zenith direction. We propose to collect plasma-line in addition to ion-line data. The PRF for the experiment is not critical, and sampling should be at 300-m intervals covering at least the range of altitudes depicted in Fig. 1. Our goal is to observe coexisting structured sporadic-E layers, bottomside density irregularities, and topside “turbulence” with greater fidelity than was possible without the plasma-line observations. We do not require beam steering, structure being the focus of the experiments rather than dynamics.

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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 request operations of the BU optical imager.

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned