

Technical Page

This proposal has not been submitted before.

Proposal Type: Regular
 General Category: Terrestrial Aeronomy
 Observation Category: Ionosphere
 Total Time Requested: 36 Hours
 Minimum Useful Time: 3

Proposal Title: Sporadic-E layers and MSTIDs

ABSTRACT:

We propose to observe sporadic E layers, F-region MSTIDs, irregularities in the respective layers, and contextual parameters throughout the E and F region over Arecibo in postsunset hours in January using the Arecibo incoherent scatter radar and associated imagers and lidars. 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 objective is to measure densities, drifts, and electric fields within irregular sporadic E layers and MSTIDs as completely as possible. The experiments will be supported by imaging coherent scatter radars on St. Croix and Guadeloupe which have common volumes with Arecibo in the E and F regions, respectively.

Name	Institution	E-mail	Phone	Student
David L Hysell	Cornell University	dlh37@cornell.edu	607 255-0630	no

Remote Observing Request

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

Instrument Setup

430 G 430 CH receiver 430 Xmit

Atmospheric Observation Instruments:

Ionosonde Lidar

Description of Observer Equipment: Caribbean radars.

Special Equipment or setup: We will request support from the BU imager guys. Lidar support from

Arecibo would be appreciated. Any wavelength could provide novel information. Winds and temperatures, should they become available, would be extraordinarily useful.

RFI Considerations

Frequency Ranges Planned