Proposal Identification No.: T2730
Date Received: 2012-Feb-20

Technical Page

Proposal Type: Regular
General Category: Terrestrial Aeronomy
Sub-Category: Radar
Observation Category: Ionosphere
Total Time Requested: 64 Hours
Minimum Useful Time: 1 hour

Proposal Title: Common-volume radar observations of sporadic E layers and F region irregularities

ABSTRACT:
We propose to observe sporadic E layers, irregularities in the layers, 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 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 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.

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
<th>E-mail</th>
<th>Phone</th>
<th>Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>Davi L Hysell</td>
<td>Cornell University, Earth</td>
<td><a href="mailto:dlh37@cornell.edu">dlh37@cornell.edu</a></td>
<td>+1 607 255-0630</td>
<td>no</td>
</tr>
<tr>
<td></td>
<td>and Atmospheric Sciences</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remote Observing Request

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

Instrument Setup

430 G 430 CH receiver 430 CH radar

Atmospheric Observation Instruments:
Ionosonde Lidar
Description of Observer Equipment: Radars on Guadeloups and St. Croix

Special Equipment or setup: Radar is primary, optics are backup

RFI Considerations

Frequency Ranges Planned