Technical Page

This proposal has not been submitted before.

Proposal Type: Regular
General Category: Terrestrial Aeronomy
Sub-Category: Radar
Observation Category: Middle-Lower Atmosphere
Total Time Requested: 144 Hours
Minimum Useful Time: 96 hours

Proposal Title: A study on the composition, coupling and dynamics in the lower thermosphere with incoherent scatter radar and lidars

ABSTRACT:

We propose to use the Arecibo incoherent scatter radar (ISR) and lidars to study the mesosphere and lower-thermosphere (MLT, 80-230 km) composition, coupling, dynamics and energetics. In this proposal, we pursue four scientific objectives that are made possible by the proposed observations at Arecibo: - Study the altitudinal and seasonal variations of the molecular ion fraction, ion temperature and electron temperature and their dependence on solar input systematically; - Study the circulation of metallic ions at low latitude using simultaneous radar and lidar observations; - Investigate the dynamic and chemical coupling of molecular ions, ion temperature, electron temperature, electron density and vertical ion velocity; - Study the electron energy balance and delineate the altitude ranges of the dominant processes.

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<thead>
<tr>
<th>Name</th>
<th>Institution</th>
<th>E-mail</th>
<th>Phone</th>
<th>Student</th>
</tr>
</thead>
<tbody>
<tr>
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<td>5135290743</td>
<td>no</td>
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</tbody>
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Remote Observing Request

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

Instrument Setup

430 CH receiver 430 Xmit

Atmospheric Observation Instruments:
Tilt-Photometer Spectrophotometer Fabry-Perot Ionosonde Lidar

Special Equipment or setup: none
RFI Considerations

Frequency Ranges Planned