

Technical Page

This proposal has not been submitted before.

Proposal Type: Regular
 General Category: Terrestrial Aeronomy
 Sub-Category: Radar
 Observation Category: Plasma Processes
 Total Time Requested: 320 Hours
 Minimum Useful Time:

Proposal Title: Assorted Ionospheric Heating Experiments

ABSTRACT:

With the sudden demise of the old Arecibo heating facility around the 1980's, several ongoing experiments remain unfinished. This proposal describes a plan to carry out these experiments in the light of new information available during the last decades. The experiments involve: 1) ELF/VLF generation in the ionosphere at Arecibo. (Originally published in Nature, 1980). The conventional explanation for ELF generation by modulating the ionospheric current, is not applicable at Arecibo. New mechanisms are involved. Also the experiments need to be validated. 2) Plasma Line fluctuations and topside plasma lines: Published in JGR and GRL. These observations need to be corroborated and explained. 3) Plasma Turbulence and HF diagnostics: Various HF effects are manifested during heating. Use of the HF diagnostics in addition to IST, covers much wider scale sizes and improved understanding of these plasma processes.

Name	Institution	E-mail	Phone	Student
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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

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned

430