

Technical Page

This proposal has not been submitted before.

Proposal Type: Urgent
 General Category: Astronomy
 Observation Category: Thermosphere
 Total Time Requested: 8 Hours
 Minimum Useful Time: 0.5 hours

Proposal Title: HF-enhanced UHF ion line and plasma line dependence on interaction altitude relative to the electron gyro-harmonic at Arecibo

ABSTRACT:

HF-enhanced ion line (HFIL) and plasma line (HFPL) measurements made with the incoherent scatter radar (ISR) at Arecibo are critical diagnostics for experiments involving high-power radio wave interactions with the ionosphere. The objective of this experiment is to use the Arecibo ISR and HF transmitter to measure the altitude and spectra of the resulting HFIL/HFPL throughout the experiment campaign. Nominally this objective includes the "dual beam" ISR mode at Arecibo and "on-off" square-wave modulation of the HF transmitter with a periods of up to several minutes. However, the nature of the work is exploratory and can be performed in conjunction with most experiments. Results obtained at Arecibo will be compared with results obtained at the high-latitude HAARP facility with the modular UHF ionosphere radar (MUIR).

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

Atmospheric Observation Instruments:

Ionosonde

Description of Observer Equipment: Shortwave radio in College, Alaska.

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned