

## Technical Page

This proposal has not been submitted before.

Proposal Type:                    Urgent  
 General Category:                Terrestrial Aeronomy  
 Observation Category:          Ionosphere  
 Total Time Requested:         48 Hours  
 Minimum Useful Time:         30 min

**Proposal Title:** Characterization of the ionosphere response for the Arecibo HF facility  
*ABSTRACT:*

We want to emphasize that having a very sensible instrumentation, like the ISR, next to a high gain HF produces a combination that not requires the high transmitted power used in other facilities. We have been able to detect plasma enhancements with the ISR when transmitting with less than 70% of the power. However, we lack exact numbers under controlled experiments. The first objective of this proposal is to measure the specific power that is needed to excite the ionosphere and see the activity with the ISR diagnostics. The experiment will show that we are above the optimal power. A similar set of measurements were performed at HAARP where was shown only 18% of full power was needed to excite irregularities. The second objective is to compare the response of the ionosphere. Contrasting the natural and the induced response in the ionosphere allow us to see the real effects of the HF emission.

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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

Heating Facility

### Atmospheric Observation Instruments:

Tilt-Photometer    Spectrophotometer    Fabry-Perot    Ionosonde    Lidar

**Special Equipment or setup:** It will be ideal to have all the optical instruments. The idea is to show how all our instruments register the effects of the HF.

## RFI Considerations

### Frequency Ranges Planned