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:	48 Hours
Minimum Useful Time:	12

Proposal Title: The role of high-latitude magnetosphere-ionosphere coupling on the equatorial ionospheric electrodynamics

ABSTRACT:

We propose to characterize the role of high-latitude magnetosphere-ionosphere coupling on the equatorial ionospheric electrodynamics, combining magnetospheric data with and ionospheric simultaneously observations from different latitudes performed by ISR (Sonderstrom, Millstone and Arecibo) and HF radars. Excluding the space-time ambiguity of the ionospheric measurements might be a key point to understand the latitudinal features of the penetration electric fields and solve the global ionospheric electrodynamics. Thus, we propose an innovative Fixed-volume Scanning Experiment, in which the three ISR will operate simultaneously in a dual mode: a fixed direction beam and a variable direction beam to compensate the Earth' s rotation. This methodology was already validated by Gjerloev et al. [2013] during an experiment in Arecibo, providing a multipoint continuous measurement of the ionospheric electron density in the same volume of space (420 km altitude) in an inertial reference.

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Remote Observing Request

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

Instrument Setup

430 Xmit

Atmospheric Observation Instruments:

Ionosonde

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned