Proposal Identification No.: T1895
Date Received: 2004-Oct-06 10:17:56

Technical Page

Proposal Type: Urgent
General Category: Terrestrial Aeronomy
Observation Category: technique development
Total Time Requested: 20 Hours

Proposal Title: New World Day Technique Development Using Linear Regularization of lag Profiles

ABSTRACT:
This proposal is the beginning of the "practical" part of a summer student project from the past summer. We have: 1. Developed an inverse technique for decovolving ionospheric lag profiles before non-linear least squares fitting that allows pulse length biases to be completely removed (using linear regularization). 2. Developed pairs of modulated sequences for using the technique in the F region World Day program with small statistical errors 3. Simulated the entire process. We are now ready to proceed with test observations. This proposal requests the telescope time for this purpose. This work is part of a student PhD project, and also involves professors Farzad Kmalabaldi and Erhan Kudeki of the University of Illinois.

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
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<th>Student</th>
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<tbody>
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<td>no</td>
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</tbody>
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Service Observing Request

[ ] None
[ ] All of the observing run.
[ ] Part of the observing run.
[ ] Queue Observing

Remote Observing Request

[ ] No
[ ] Maybe
[ ] Yes

Instrument Setup

430 G 430 CH receiver 430 CH radar

Atmospheric Observation Instruments:

Special Equipment or setup: The SAS datataking software needs an upgrade allowing different radar controller parameters to be used on successive radar pulses. This upgrade is also needed for at least two other potential projects, one of which is also being proposed in this period.

RFI Considerations
Frequency Ranges Planned

429-431