2018 Workshop: Ionospheric Disturbance Instrumentation

Long title
Space Weather Observation Network I: Ionospheric Disturbances
Conveners
William Bristow
Aaron Ridley
Josh Semeter
David Fritts
Seebany Datt-Barua
Jade Morton
Description

Description: This workshop will be a forum for the CEDAR community to put forward its ideas regarding the instrumentation that is required to enable prediction of ionospheric disturbances. The community will be asked to address five questions:

1) What are the goals of predicting ionospheric disturbances? 2) What gaps in understanding must be filled to enable predictive simulations? 3) What modeling advances are needed for prediction? 4) What observations are necessary to provide the basis for understanding and modeling? 5) What instrumentation is necessary to provide those observations?

We will be making dynamic notes here

Agenda

1) What are the goals of predicting ionospheric disturbances?

Rob Steenburgh - NOAA

Jade Morton

2) What gaps in understanding must be filled to enable predictive simulations?

Dave Hysell

Hyunju Connor

3) What modeling advances are needed for prediction and specification?

Tomoko Matsuo

Tzu Wei Fang

Joe Huba

4) What observations are necessary to provide the basis for understanding and modeling?

Farzad Kamalabadi

5) What instrumentation is necessary to provide those observations?

Bill Bristow

Joe Malins

Asti Bhatt

Seebany Datta-Barua

Diana Loucks

Discussion topics: Enabling technologies (Ground and Sats and synergies)

Justification

The free energy released into the geospace system through solar wind-magnetosphere-ionosphere-atmosphere interactions produces ionospheric variability across a broad spectrum of scales. Developing a complete predictive understanding of this physics addresses Key Science Goal 2 of the NRC Decadal Survey for Solar and Space Physics. In addition, since the ionosphere is directly responsible for many space weather effects, characterization and prediction of ionospheric disturbances

addresses the goals of the OSTP National Space Weather Action Plan.

Developing observation and instrumentation strategies addressing key unknowns for Geospace Systems Studies is a CEDAR strategic thrust.

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