Project Details

ROSES ID: NNH07ZDA001N
Selection Year: 2008
Program Element: Focused Science Topic

Topic: Focused science topics for Strategic Goal 4 (Ionosphere-Thermosphere): Determine the sources of daily variability in the thermosphere and ionosphere

Project Title:
Towards a Predictive Model for the Day-To-Day Variability of Equatorial Ionospheric Spread-F Bubbles

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Summary:
An outstanding problem in ionospheric-thermospheric physics, which has a major impact on human technology, is the day-to-day variability of equatorial ionospheric spread-F bubbles. The objective of the proposed research is the development of a predictive model for the day-to-day variability of equatorial spread-F bubble structures. The approach will be to use our recently developed 3D time-dependent first-principles nonlinear plasma fluid simulation model in combination with different seeding mechanisms. The effects of different seeding mechanisms, both separately and in combination, will be studied and assessed. The proposed research is significant in that it will lead to a much improved understanding of the mechanism(s) for the triggering and subsequent growth of equatorial ionospheric spread-F bubbles and a predictive model for the day-to-day variability of these bubble structures.

Publication References:

Summary: no summary


Summary: no summary


Summary: no summary