2020 Workshop: Ionospheric density gradients

Long title
Geospace storm dynamics in the upper atmosphere and ionospheric density gradients
Conveners
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Description

This session provides a forum to discuss advances in understanding the fundamental storm-time dynamics in the ionosphere and thermosphere with focus on ionospheric density gradients. These remarkable ionospheric structures, of great interest to this session, include storm enhanced density, midlatitude ionospheric trough, polar tongue of ionization, polar patches, and large traveling ionospheric disturbances. We welcome contributions that characterize these storm-time features and/or address physical processes leading to their formation and evolution. Topics related to the space weather impact of these density gradients are also welcome. We expect a total of ~15 min for online presentation and follow-up discussion for each talk. The session is open to the international research community.

Agenda

-08:30 **Toshi Nishimura** [M-I-T responses to an extreme substorm during the 5 April 2010 storm]

-08:44 **Qinghe Zhang** [High density structures and their associated scintillation in the polar ionosphere]

-08:58 **Kevin Pham** [Coupled Magnetosphere-Ionosphere-Thermosphere Simulation of TADs/TIDs]

-09:12 **Dong Lin** [Diffuse electron precipitation effects on SAP]

-09:26 **Ercha Aa** [Understanding the dynamics of the main trough in the topside ionosphere]

-09:40 **Yue Deng** [TID excitation by auroral and subauroral processes: GITM simulations]

-09:54 **Larry Lyons** [Identification of auroral zone activity driving LSTIDs]

-10:08 **Roger Varney** [RISR Observations of Polar Cap Patches During the Recent Solar Minimum]

Short Talks -- --

-10:22 **Shasha Zou** [Local time dependent hemispheric asymmetry of storm-time ionospheric response]

-10:31 **Robert Gillies** [Creation of polar patches by fast ionospheric convection changes observed by RISR]

-10:40 **Anthea Coster** [GNSS TEC observation during the 1 March 2017 substorm observational campaign]

-10:49 **Qingyu Zhu** [Impacts of soft electron precipitations on the neutral density and satellite drag during the 28-29 May 2010 geomagnetic storm]

Summary

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