2022 Workshop: MSTID/TID/TAD

Long title
Advances in atmosphere vertical coupling and its relationship with ionosphere-thermosphere oscillatory phenomena (TAD/TID/MSTIDs).
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Description

The workshop will emphasize state-of-the-art investigations of the atmospheric processes that enable or indicate coupling and energy transfer within the atmosphere layers, including TAD, TIDs, and MSTIDs phenomena. The workshop will be composed of short presentations (~10 minutes). We welcome presentations on methodologies, including theory, modeling, observation, and experiment.

Agenda

- Garima Malhotra (CIRES, Univ. of Colorado) - ***Climatology of medium-scale thermospheric gravity waves simulated by high-resolution Whole Atmosphere Model***
- Shun-Rong Zhang (MIT Haystack) - ***MSTID studies using Millstone Hill ISR and GNSS Observations***
- Nathaniel Frissel (University of Scranton) - ***Recent Advances in Observing Traveling Ionospheric Disturbances Using Amateur Radio Techniques***
- Bill Engelke (University of Alabama) - ***Detecting Large Scale Traveling Ionospheric Disturbances using Machine Learning and Amateur Radio Data***
- Manbharat (NRL) - ***Impacts of LSTIDs/LSTADs on I-T System.***
- Justin Tyska (University of Texas Arlington) - ***Volcano-generated Ionospheric Disturbances: Comparison of GITM-R simulations with GNSS observations***

- Bharat Kunduri (Virginia Tech) - ***MSTIDs observed in SuperDARN and GPS TEC - new results on storm-time electrified MSTIDs.***
- Dustin Hickey (NRL) - ***MSTIDs associated with tropospheric storms***
- Pavel Inchin (ERAU) - ***Ionospheric responses to thunderstorm-generated acoustic and gravity waves over the continental US.***
- Pedrina Terra (Arecibo Observatory/ UCF) - ***A multi-instrumental diagnosis of the Hurricane Maria Category IV signatures over the Caribbean sector.***

Justification

We want to know the latest advances in the vertical coupling of the atmosphere and its relationship with the ionosphere-thermosphere oscillatory phenomena (TAD/TIDs/MSTIDs), its low, medium, and high latitude sources, its physical mechanisms of excitation. We also want to discuss the formation, progression, and global impacts of traveling ionospheric/atmospheric disturbances (TADs/TIDs), long-standing challenges of space weather research. We welcome submissions on methodologies, including theory, modeling, observation, and experimentation. We are also interested in multi-instrumental approaches to better understand atmospheric coupling.

Related to CEDAR Science Thrusts:
Explore processes related to geospace evolution
Manage, mine, and manipulate geoscience/geospace data and models
Workshop format
Short Presentations
Keywords
Atmospheric Coupling, MSTID, TAD, TIDs
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