2018 Workshop: GEM CEDAR Modeling Challenge

Long title
GEM-CEDAR Model Validation Challenge
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Description

Since introducing ionosphere/thermosphere model validation studies, which carried out through "International Forum for Space Weather Capabilities Assessment", last year, much progress has been made in our validation studies.

This year, we will present and discuss results of the studies that focus on:

- Validation of Ionospheric Specifications During Geomagnetic Storms:
  - o Global and Regional TEC
  - o Local TEC and foF2
- Assessment of Current Capabilities in Modeling the Ionospheric Climatology:
  - o foF2 and hmF2
- Characterizing the Low-latitude Scintillation

- Next Steps and Future Work Plans

Justification

Ionosphere/thermosphere and geospace research is increasingly relying on numerical simulations. In recognition that model validation is a challenging research task, the CEDAR and GEM communities initiated community wide model validation activities: GEM GGCM (in 2008) and CEDAR Electrodynamics Thermosphere Ionosphere (in 2009) Model Validation Challenges. The CEDAR-GEM Model Validation Challenge, built upon the GEM GGCM and CEDAR ETI Challenges, was initiated during the previous Joint GEM-CEDAR Workshop in 2011. The CEDAR-GEM Challenge

is focusing on physical parameters, spatial domains and aspects of model validation of interest to both communities.

This workshop will address the CEDAR Strategic Thrust #5 as the workshop will facilitate collaboration among modelers, data providers and research communities in order to address the differences between various modeling approaches, to track model improvements over time, and to provide feedback for further model improvement.

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