2020 Workshop: New Model Capabilities

Long title
Modeling Capabilities for Studying the Coupled Atmosphere System: New Developments and Applications
Conveners
Hanli Liu
Jonathan Snively
Description

Numerical models are indispensable tools to elucidate the coupling processes of various atmospheric regions on broad temporal and spatial scales, to interpret and integrate observations from different platforms, and to specify and forecast space environment. As such, there have been fast development of model capabilities in recent years, and they have been applied to address a diverse range of research problems. This workshop will provide a forum to discuss these new developments and applications and identify challenges, requirements and research needs for future development.

Agenda

Astrid Maute: "What ionospheric electrodynamics modeling capabilities are needed?" (video)

Jonathan Snively: "Model for Acoustic-Gravity wave Interactions and Coupling (MAGIC)" (video)

Matt Zettergren: "Geospace Environment Model for Ion-Neutral Interactions (GEMINI)" (video)

Joe Huba: "Global modeling of equatorial spread F with SAMI3/WACCM-X" (video)

Kevin Pham: "GAMERA and coupling with Ionosphere/Thermosphere Models" (video)

Meghan Burleigh: "Impacts of ionospheric feedback: 2-way ionosphere-magnetosphere coupling" (video)

Saurav Aryal: "Data-model comparison of the July 2nd, 2019 total solar eclipse's global-scale thermospheric effects" (video)

Nick Pedatella: "Assimilation of Ionosphere Observations in the Whole Atmosphere Community Climate Model with thermosphere-ionosphere eXtension (WACCMX)" (video)

Group Discussions (video)

Participants are also encouraged to check out information on SIMA, the System for Integrated Modeling of the Atmosphere. SIMA is an effort initiated by NCAR to develop a unified atmospheric modeling framework for the broad scientific community. The goal is for SIMA to enable scientific applications within and across climate, weather, chemistry, and geospace. Information on SIMA and the upcoming SIMA Workshop including a pre-recorded talk (16 min) introducing SIMA presented by Dr. Andrew Gettelman.

View PDF