

CEDAR-GEM Modeling Challenge (Thursday, 25 June, 10:00 am -12:00 pm)

Modeling neutral density/satellite drag during storms

1. Tidal mixing effects on neutral density, Tim-Fuller Rowell (CU/NOAA SWPC) (10:00-10:20)
2. Neutral density variability driven by geomagnetic forcing: Global Joule heating index, Mariangel Fedrizzi (CU/NOAA SWPC) (10:20-10:35)
3. Improvement in modeling of neutral density at high altitude, Eric Sutton (AFRL) (10:35-10:50)
4. Ensemble Assimilation Using First-Principles Models: A Tool for Three-Day Space Weather and Satellite Drag Forecasts, Marcin Pilinski (ASTRA) (10:50-11:05)
5. GITM comparisons to GOCE, CHAMP and GRACE mass density data, Aaron Ridley (UM) (11:05-11:15)
6. High-latitude neutral density statistics, Cheryl Y Huang (USAF AFMC AFRL/RVBXP) (11:15-11:25)

Discussion (11:25-12:00)

- Metrics selection for drag study
 1. Definitive orbits vs derived neutral density from orbit
 2. Point vs orbit averaged density
- Possible sources of data at different altitudes
- How to Improve density prediction?
 1. Capturing small scale structures during storms
 2. Prediction of geomagnetic indices
 3. Alternative geomagnetic indices
- How to Improve physics-based model neutral density at high altitude?
- Ideas on linking thermospheric models to orbit propagator at CCMC