

The Impact of Solar Activity on Forecasting the Upper Atmosphere via Assimilation of Electron Density Data

- Assimilated COSMIC-Ne into the physics-based upper atm. model TIE-GCM using an ensemble Kalman filter
- The assimilation significantly improves the agreement between the analysis/posterior and COSMIC data
- The agreement between hourly forecasted Ne and data is better during solar min (E1) than solar max (E2)
- The assimilation of COSMIC-Ne into TIE-GCM also significantly influences the neutral dynamics

Kodikara et al., *Space Weather*, <https://doi.org/10.1029/2020SW002660>

EnKF: www.image.ucar.edu/DARes/DART

TIE-GCM: www.hao.ucar.edu/modeling/tgcm

COSMIC: www.cosmic.ucar.edu (level-2 electron density profiles)

