

**Assimilating FORMOSAT3 /COSMIC Radio Occultation
Data with NCAR Thermosphere-Ionosphere
Electrodynamics Global Circulation Model**

M. Q. Chen and C. M. Huang

Institute of Space Science, National Central University, Taiwan, ROC

The NCAR/TIE-GCM is a self-consistently electrodynamic coupled thermosphere and ionosphere model subjected by a few parameters and boundary conditions to describe the dynamics of the ionosphere and the thermosphere. We constructed a data assimilation system for one-day nowcast on the ionosphere by assimilating FORMOSAT-3/COSMIC data which is the measured occultation total electron content (TEC) between GPS and LEO satellites. By starting with an initial state of the TIE-GCM which is a stationary state with the optimal parameters that obtained by assimilating the occultation data, the dynamic space weather in the ionosphere and the thermosphere could be simulated. The parameters are for solar EUV/UV radiation, migrating diurnal tide and semi-diurnal tides used at lower boundaries.