# Abstract Details



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**Organization:** Institute of Space Science

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**Title:** Assimilation of GPS/MET radio occultation data for a coupled thermos ionosphere model: a case study

**Abstract:**

We represent a 4-dimensional variational data assimilation (4DVAR) GCM (thermosphere-ionosphere electrodynamics general circulation r by using GPS/MET radio occultation data. The NCAR/TIE-GCM global circulation model is a self-consistently electrodynamic-coupled therm and ionosphere model subjected by a few parameters and boundary conditions to describe the dynamic thermosphere and ionosphere. Glo Positioning System (GPS) radio occultation signals received by a low e orbit (LEO) satellite provide precisely measurement about the total el content (TEC) along the signal paths to GPS satellites. We consider op use of GPS/MET occultation total electron content data to obtain the r accuracy parameters used in TIE-GCM by minimizing the difference b the model results and measurements. The parameters used in TIE-GC as solar flux, hemisphere power, cross-tail potential, diurnal and semi tidal modes at lower boundary, ionic oxygen flux at upper boundary, a background ionization rates are assuming constant within an assimila cycle. The cost function associated with 4DVAR is constructed as the f of the model parameters and then be minimized with respect to the parameters. We will examine the 4DVAR to the weather of the ionosp from the simulated result of TIE-GCM in the day, February 23, 1997, result will be compared with the TEC observed by the global GPS netw system

**Presentation Mode:** Oral

**Keywords:** data assimilation, TIEGCM model, GPS/MET experiment, Radio occul total electron content

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