

Agenda

- GGCM Metrics Challenge Status (10 min)
- Dst index metrics study. First results (30 min)
 - Dan Welling
 - Lutz Rastaetter
- Geospace models validation for operations
 - Howard Singer (10 min)
- Ideas for new metrics studies (30 min)
 - Ionosphere Joule heating (Delores Knipp)
 - Auroral oval position (Yihua Zheng)
 - RBSP model validation needs (Sasha Ukhorskiy)
- Plans for 2011 GEM-CEDAR Workshop (10 min)
- List of events update (5 min)

Events and Physical Parameters

Event 1: Oct 29, 2003 06:00 UT - Oct 30, 06:00 UT

Event 2: Dec 14, 2006 12:00 UT - Dec 16, 00:00 UT

Event 3: Aug 31, 2001 00:00 UT - Sep 01, 00:00 UT

Event 4: Aug 31, 2005 10:00 UT - Sep 01, 12:00 UT

Metric Study 1: Magnetic field at geosynchronous orbit

Metric Study 2: Magnetopause crossings by geosynch. satellite

Metric Study 3: Plasma density/temperature at geosynch. orbit

Metric Study 4: Ground magnetic perturbations

Metrics Study 5: Dst

On-line time series plotting tool

Challenge events:

- Event 1: October 29th, 2003 06:00 UT - October 30th, 06:00 UT
- Event 2: December 14, 2006 12:00 UT - December 16, 00:00 UT
- Event 3: August 31, 2001 00:00 UT - September 1, 00:00 UT
- Event 4: August 31, 2005 10:00 UT - September 1, 12:00 UT

Metrics studies:

- 1: Magnetic field at geosynchronous orbit (GOES)
- 2: Magnetopause crossings by geosynchronous satellite (GOES and LANL)
- 3: Plasma density/temperature at geosynchronous orbit (LANL)
- 4: Ground magnetic perturbations (ground based magnetometers)
- 5: DST (final or provisional DST index from [WDC](#), [Kyoto](#))

	Metrics Study 1	Metrics Study 2	Metrics Study 3	Metrics Study 4	Metrics Study 5
Event 1	GOES12 GOES10	LANL-02A LANL-01A LANL-97A LANL-1994 LANL-1991 LANL-1990 GOES12 GOES10	LANL-02A LANL-01A LANL-97A LANL-1994 LANL-1991 LANL-1990	YKC MEA NEW FRN IQA PBQ OTT FRD HRN ABK WNG FUR	DST
Event 2	GOES12 GOES11	LANL-02A LANL-01A LANL-97A LANL-1994 LANL-1989 GOES12 GOES11	LANL-02A LANL-01A LANL-97A LANL-1994 LANL-1989	YKC MEA NEW FRN IQA PBQ OTT FRD HRN ABK WNG FUR	DST
Event 3	GOES10 GOES08	LANL-01A LANL-97A LANL-1994 LANL-1990 GOES10 GOES08	LANL-01A LANL-97A LANL-1994 LANL-1990	YKC MEA NEW FRN IQA PBQ OTT FRD ABK WNG FUR	DST
Event 4	GOES12 GOES10	LANL-02A LANL-01A LANL-97A LANL-1994 LANL-1990 GOES12 GOES10	LANL-02A LANL-01A LANL-97A LANL-1994 LANL-1990	YKC MEA NEW FRN PBQ OTT FRD HRN ABK WNG FUR	DST

Challenge Status Summary

- Ground magnetic perturbations
 - First report is submitted to Space Weather J. (Pulkkinen et al)
 - Study of interest for NOAA SWPC geospace model selection for operations
 - Repeat the study next year with updated models to show progress over time
- Magnetic field at geosynchronous orbit
 - Draft of the report is ready (Rastaetter et al).
- Magnetopause crossings by geosynch. satellite
 - Comparison with LANL magnetopause in/out time series.
 - In-depth comparative study of magnetopause position
- Plasma parameters at geosynch. orbit
 - On-line tool for LANL MPA data and model output comparison is ready
 - SOPA ion corrections for MPA are needed for pressure comparison. J. Borovsky and R. Friedel are working on removal of electron contamination from the low- energy ion channels of SOPA
- Dst index study
- CEDAR Electrodynamics Thermosphere Ionosphere (ETI) Challenge.

CEDAR Challenge : Physical Parameters

- Vertical and horizontal drifts at Jicamarca (V_{perpN} and V_{perpE})
- Neutral density at CHAMP orbit (N_{den})
- Electron density at CHAMP orbit (E_{den})
- NmF2 from LEO satellites (CHAMP and COSMIC) and ISRs
- HmF2 from LEO satellites (CHAMP and COSMIC) and ISRs
- Global TEC

CEDAR Challenge : Events

GEM storms

E.2006.348: 2006/12/14 (doy 348) 12:00 UT - 12/16 (doy 350) 00:00 UT (Kp_max = 8)

E.2001.243: 2001/08/31 (doy 243) 00:00 UT - 09/01 (doy 244) 00:00 UT (Kp_max = 4)

E.2005.243: 2005/08/31 (doy 243) 10:00 UT - 09/01 (doy 244) 12:00 UT (Kp_max = 7)

Year of incoherent scatter radar (ISR) observations from 2007/03/01 (doy 060) –
2008/03/31 (doy 091)

Moderate storms

E.2007.091: 2007/04/01 (doy 091) 00:00 UT - 04/02 (doy 092) 12:00 UT (Kp_max = 5)

E.2007.142: 2007/05/22 (doy 142) 12:00 UT - 05/25 (doy 145) 00:00 UT (Kp_max = 5.7)

E.2008.059: 2008/02/28 (doy 059) 12:00 UT - 03/01 (doy 061) 12:00 UT (Kp_max = 5.3)

Quiet periods

E.2007.079: 2007/03/20 (doy 079) 00:00 UT - 03/22 (doy 081) 00:00 UT (Kp_max = 0.7)

E.2007.190: 2007/07/09 (doy 190) 00:00 UT - 07/10 (doy 191) 00:00 UT (Kp_max = 0.3)

E.2007.341: 2007/12/07 (doy 341) 00:00 UT - 12/09 (doy 343) 00:00 UT (Kp_max = 1.0)