

Status report of CDF database and TDAS plug-in for SD data developed by ERG-SC

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1. Introduction
 - ERG project and ERG-SC
 - ERG ground data (collaboration with institutes/universities)

2. Status report and recent topics for SD data
 - Agreement with SD PI council
 - CDF database
 - Development of TDAS plug-in

3. Future plan

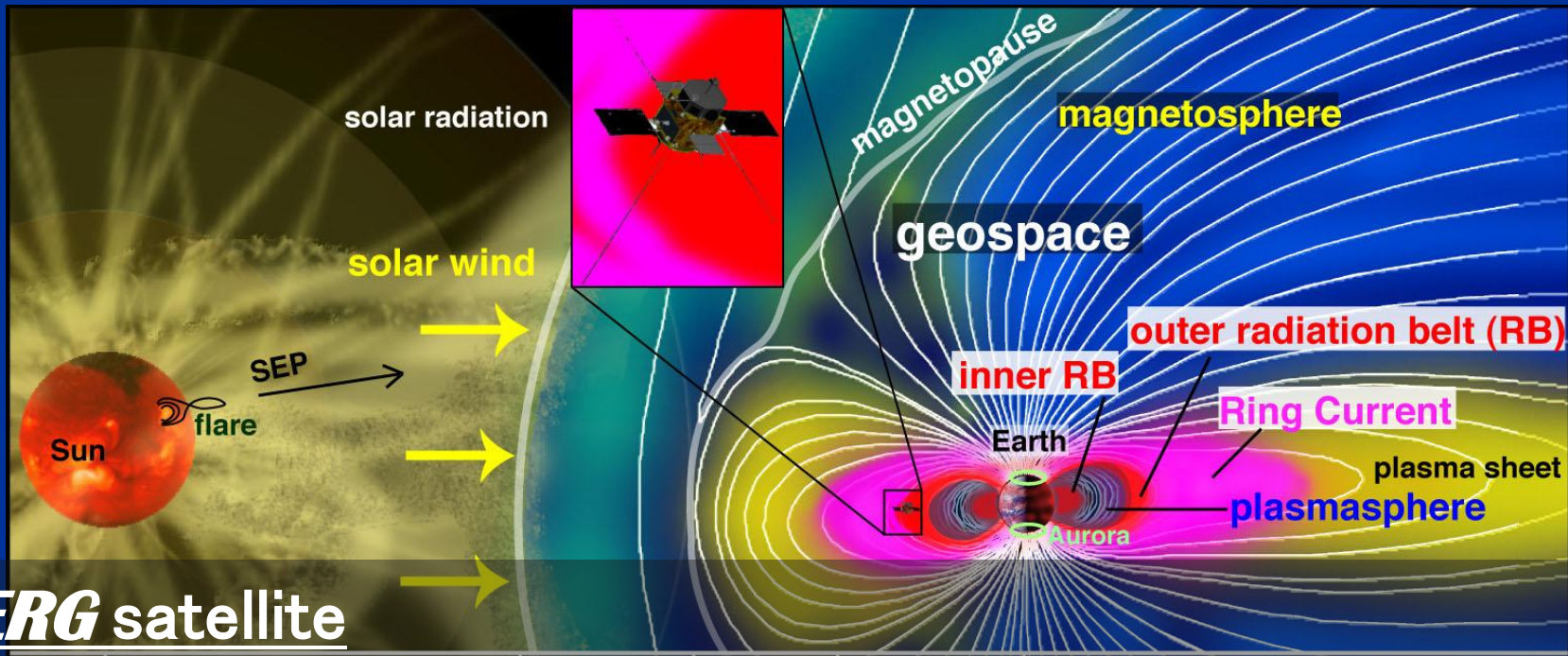
4. Summary

ERG: Energization and Radiation in Geospace

Geospace exploration project during the next solar maximum

Goal: Understanding acceleration/loss of radiation belt particles and space storm dynamics

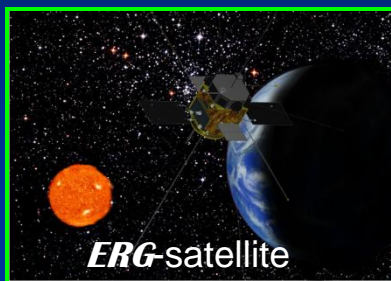
Target region: Inner magnetosphere (coupled with sub-auroral region)



ERG satellite

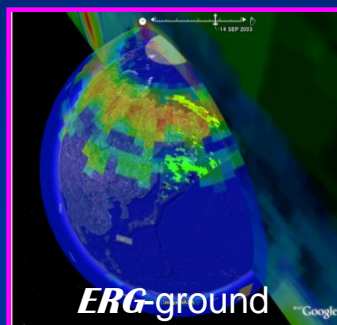
Selected as 2nd mission candidate of the small satellite series by JAXA/ISAS (planned launch: 2015)

ERG project



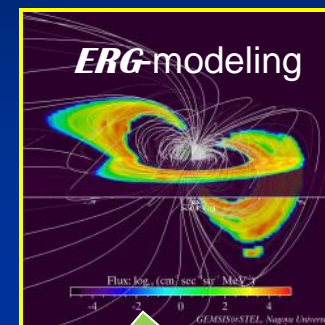
ERG-satellite

Universities, Institute



ERG-ground

Universities, Institute



ERG-modeling

Flux: $\log_{10}(\text{cm}^{-2} \text{sec}^{-1} \text{sr}^{-1} \text{MeV}^{-1})$

GEMSI@STEL, Nagoya University

The data of ERG-satellite will be archived in JAXA.

collaboration



ERG – Science Center (STELab, Nagoya univ.)



Data Server

Integrated Analysis Tool

freely available

researchers

The ERG-science center that archives all kind of project data is installed in STE-Lab and develops the **integrated analysis tool based on THEMIS Data Analysis Software suite (TDAS)**.



ERG-ground data in collaboration with institutes/universities

All (ground, satellite) data are archived as **CDF** files and made available to researchers

- Geomag (fluxgate) : 210 MM, MAGDAS, NIPR, NICT
- Geomag (induction) : STEL, NIPR, NICT, Tohoku Univ.
- HF radar : STEL, NICT, NIPR
- All-sky camera : STEL, NIPR, NICT
- Riometer : NIPR
- VLF : NIPR
- LF wave : Tohoku Univ.

Collaboration with IUGONET:

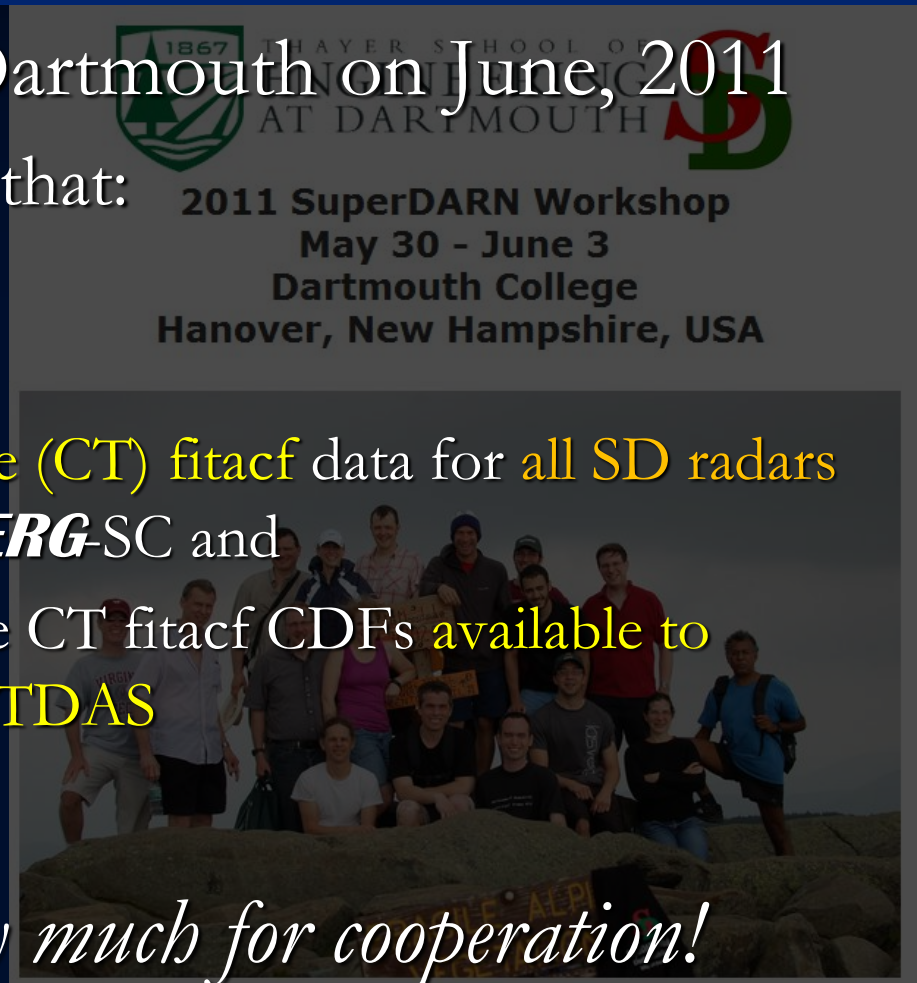
- CDF and IDL load routines for 210MM, NIPR geomag, HF radar
- ERG-SC plug-in has been included in UDAS
- EISCAT CDF data and IDL routines are provided by IUGONET

- At SD workshop @Dartmouth on June, 2011
 - SD PI council agreed that:

ERG-SC is going to

- Convert **common time (CT) fitacf** data for **all SD radars** to **CDF** designed by **ERG-SC** and
- Archive and make the CT fitacf CDFs **available to researchers for use in TDAS**

Thank you very much for cooperation!



■ CDF database for common time fitacf data

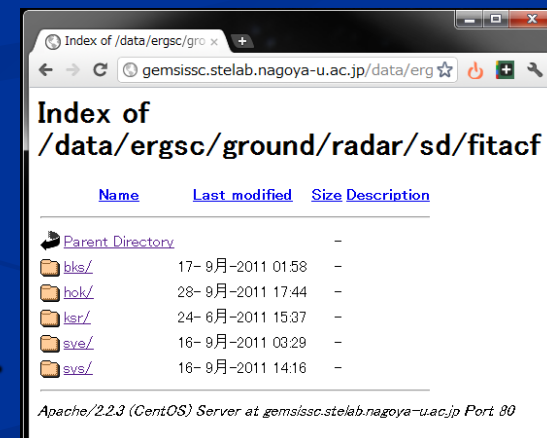
- Data for Japanese 4 radars (HOK,KSR,SYE,SYS) + BKS have been archived in CDF.

Archive status:

- HOK: nearly real-time
- KSR: to early Jul 2011
- SYE, SYS, BKS: to Apr 2011

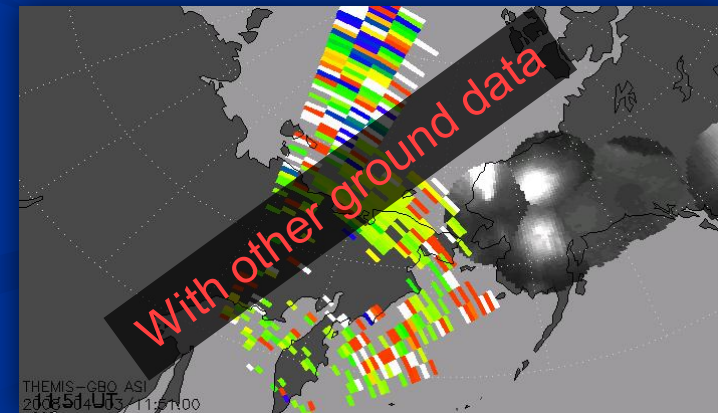
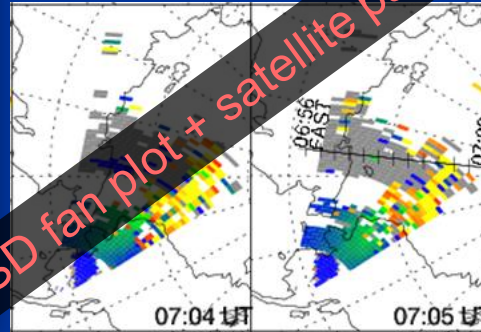
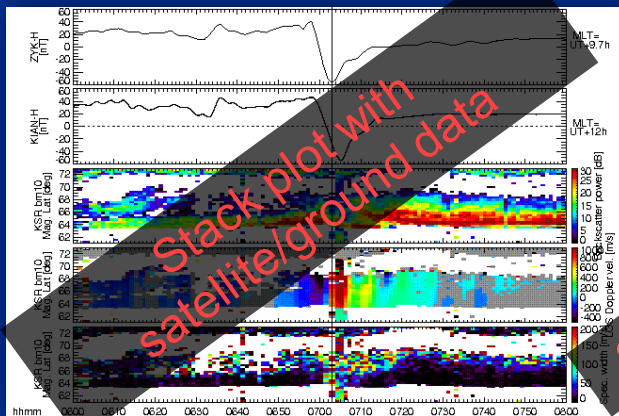
■ Change/reprocessing of CDF

- “channel” added as a new data variable.
- Fixed the units for Tx frequency



■ **ERG-SC** plug-in tool for TDAS

- **SD tool** (in IDL, included in **ERG-SC** plug-in) has been ported to bleeding edge versions of TDAS and made available to TDAS core users for trial.
- Will be released as TDAS ver. 6.1 this winter(?)
 - including SD, 210MM, STEL induction, NIPR geomag



ERG-SC plug-in tool (bleeding_edge)

<u>Name</u>	<u>Last modified</u>	<u>Size</u>	<u>Description</u>
Parent Directory	-	-	-
ergsc_r74_2010-11-30.zip	05-Dec-2010 03:00	9.7K	
ergsc_r75_2010-12-05.zip	09-Dec-2010 02:07	9.7K	
ergsc_r76_2010-12-09.zip	10-Dec-2010 03:00	12K	
ergsc_r90_2010-12-10.zip	22-Dec-2010 03:00	12K	
ergsc_r91_2010-12-22.zip	24-Dec-2010 03:00	12K	
ergsc_r92_2010-12-24.zip	10-Jan-2011 03:00	12K	
ergsc_r96_2011-01-10.zip	11-Jan-2011 03:00	18K	
ergsc_r97_2011-01-11.zip	13-Jan-2011 03:00	18K	
ergsc_r99_2011-01-13.zip	13-Jan-2011 21:20	47K	
ergsc_r101_2011-01-13.zip	24-Jan-2011 03:00	84K	
ergsc_r110_2011-01-31.zip	04-Feb-2011 03:00	84K	
ergsc_r112_2011-02-04.zip	09-Feb-2011 03:00	84K	
ergsc_r114_2011-02-10.zip	14-Feb-2011 03:00	84K	
ergsc_r115_2011-02-14.zip	17-Feb-2011 19:18	84K	
ergsc_r116_2011-02-17.zip	18-Feb-2011 03:00	85K	
ergsc_r117_2011-02-18.zip	22-Feb-2011 03:00	85K	
ergsc_r118_2011-02-22.zip	23-Feb-2011 03:00	85K	

http://gemsissc.stelab.nagoya-u.ac.jp/erg_socware/bleeding_edge/

- Released as a zip file including IDL codes
 - You can use them just by unzipping and copying to your TDAS directory
- Available to domestic researchers .
- Currently porting it to the TDAS distribution and will be **included in the official release of TDAS 6.1!** (freely available for international community)

Data to be made available for TDAS 6.1

- 210MM geomag (fluxgate, 1min)
- NIPR geomag (fluxgate, 1sec)
- SuperDARN (STEL, NICT, NIPR)
- STEL induction geomag

Current status and future plan for CDF and TDAS plug-in

CDF conversion completed and IDL routines were ported or are porting to TDAS

- Fluxgate magnetometer data : 210 MM 1min, NIPR
<Miyashita, Tanka + geomag data consortium (domestic) >
- SuperDARN HF radar : STEL, NICT, NIPR
<Hori + SD consortium (domestic) >
- Induction magnetometer data : STEL
<Miyashita>

CDF conversion finished, under review by PI

- 210 MM 1sec data (5 stations)

Processing CDF conversion

- Fluxgate magnetometer data : MAGDAS 1sec data (18 stations)
<Segawa, Abe>
- Riometer : NIPR
<Tanaka>
- VLF : NIPR
<Tanaka>

- Near future plan for CDF conversion :
- All sky imager data (STEL, NIPR)
 - LF wave (Tohoku U)

- **ERG-SC** has been developing the CDF database and IDL routines as TDAS plug-in to facilitate integrated analysis with satellite, ground, and simulation/modeling data of the **ERG** project.
- Common time fitacf data for Japanese 4 SD radars (followed by those for other radars in future) will be made available as CDF files to the international community.
- The plug-in tool developed by **ERG-SC** to load/process/analyze **ERG-SC** CDF data will be released with the official version of TDAS.

- Next target(s) for CDF conversion?
 - han, pyk?
 - Conjunction with EISCAT
 - tig, unw
 - Pc5 study?
 - MSI radars (operation mode varies often now...)
 - IM study?

- Workforce is highly limited!