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How is the IUGONET project using TDAS?

(IUGONET : Inter-university Upper atmosphere Global Observation NETwork)

The IUGONET project aims at building “e-infrastructure” for researchers to effectively find, get, and analyze various kinds of upper atmospheric data spread over universities and institutes.

- To distribute ground-based observational data accumulated over 50 years since IGY (both digital and analogue data)
- To promote analyses of multi-disciplinary data, which will lead to comprehensive studies of mechanisms of long-term variations in the upper atmosphere
Ground-based observations
Problems with data use

Various observation parameters (wind, geomagnetism, aurora, sunspot etc.) taken by various techniques in various time periods at various locations and altitudes

Such observational data not necessarily well used in scientific researches so far

⇒ PROBLEMS: databases dispersed, too little info, various data format, etc.

SOLUTIONS
1. Metadata database: to share info of data online and realize cross-search
2. Data analysis software: to help users quickly visualize and analyze data
Main products by the IUGONET project

1. Metadata database

http://search.iugonet.org/iugonet

We have already released the IUGONET metadata database and the data analysis software for beta-testing!

2. Data analysis software


*UDAS (IUGONET Data Analysis Software)*

**Topics**
- UDAS v1.00.01 was released on May 13, 2011. — Download UDAS

**What is UDAS?**
- UDAS is a pull-in software of THEMIS Data Analysis Software suite (TDAS), which has many useful routines to visualize and analyze time series data.
- It accesses the IUGONET data through the internet, and then the data are automatically downloaded onto the user’s computer. Users can get and analyze the data without any concerns about data locations.
- The loaded data and/or plots can be exported to a variety of data format (ASCII, PNG, JPEG, PS, EPS, etc.).
- GUI (Graphical User Interface) as well as the CUI (Character User Interface) is supplied for beginners.
- Even users who do not have the IDL commercial license will be able to use the GUI-based UDAS on the IDL Virtual Machine* (Under development)

*The IDL Virtual Machine is a freely distributed, cross-platform utility for running compiled IDL codes. The IUGONET project will distribute compiled IDL codes of the data analysis software.*

**Getting started**

View screenshots

List of load procedures and corresponding IUGONET observations

**Data Policy**

When you use the IUGONET data, please check the data policy for each data set. The data policy will be displayed in the console, when you run the load procedures on IDL. It is also possible to search the data policy at the IUGONET Metadata Database.

Collaborations

**http://www.iugonet.org/en/software.html**
UDAS is a plug-in software of TDAS and includes the load procedures for the ground-based observational data distributed by the IUGONET institutions.

- Geomagnetic field indices
- Various ionospheric and atmospheric radar
- Global magnetometer network data

Sample plot

 DST
 AE

0. If TDAS has not been installed yet, download TDAS and set it up.

1. Download UDAS from the IUGONET website.

2. Unzip the downloaded file.

3. Copy UDAS into any directory you want.

4. Set IDL path to access UDAS prior to TDAS.
1. Load procedures for the IUGONET data:
   • `iug_load_blr_rish_txt` ; Boundary Layer Radar data (RISH, Kyoto)
   • `iug_load_ltr_rish_txt` ; L-band Lowe Troposphere Radar data (RISH, Kyoto)
   • `iug_load_ear` ; Equatorial Atmosphere Radar data (RISH, Kyoto)
   • `iug_load_eiscat` ; EISCAT radar data (NIPR; Nagoya)
   • `iug_load_gmag_serc` ; MAGDAS geomagnetic data (Kyushu)
   • `iug_load_gmag_wdc` ; AE, Dst, Sym, Asym induces, geomagnetic data (WDC, Kyoto)
   • `iug_load_iprt` ; Iitate Planetary Radio Telescope data (Tohoku)
   • `iug_load_mu` ; Middle and Upper (MU) atmosphere radar data (RISH, Kyoto)
   • `iug_load_meteor_rish` ; Meteor wind radar data (RISH, Kyoto)
   • `iug_load_mf_rish` ; MF radar data (RISH, Kyoto)
   • `iug_load_gmag_mm210` ; Alias of `erg_load_gmag_mm210` (Nagoya)
   • `iug_load_gmag_nipr` ; Alias of `erg_load_gmag_nipr` (NIPR)

2. Load procedures for the ERG-related data:
   • `erg_load_sdfit` ; SuperDARN (Nagoya; NIPR; NICT)

Our software has been developed in collaboration with ERG Science Center.
Sample plot of the IUGONET data

Geomagnetic field

Syowa, Antarctica

Iceland

Hokkaido SuperDARN radar

MU radar
You can use GUI for loading the IUGONET data.

Instrument Type: Solar radio waves by IPRT

IUGONET Data tab
The IUGONET project (http://www.iugonet.org) builds metadata database and data analysis software (UDAS) to promote effective use of upper atmospheric data taken by various ground-based observations.

UDAS is a plug-in software of TDAS and provides the load procedures for the various ground-based observational data distributed by each institution in the IUGONET project.

The IUGONET products have been beta-released!

Metadata database : http://search.iugonet.org/iugonet/

We welcome your feedback