

OPTIMALIZATION OF INDONESIAN ATMOSPHERIC DATABASE (BISMA) AND ITS IMPLEMENTATIONS

<http://bisma.sains.lapan.go.id>

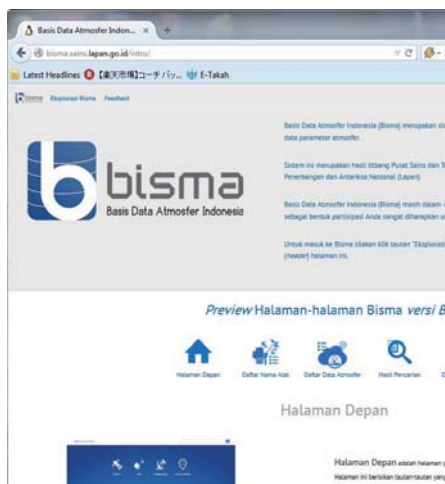


Laras Toersilowati, Afif Budiyo, Edy Maryadi,
Halimurrahman, Mahmud, Muzirwan, and Risyanto

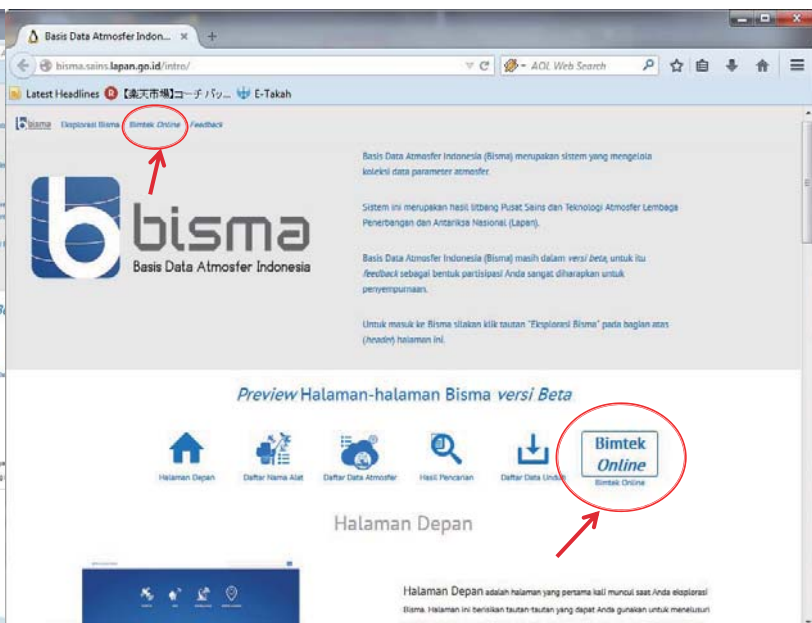
22nd CEReS International Symposium
29 October 2014
UGM – Yogyakarta, Indonesia

Online Technical Guidance of BASIS DATA ATMOSFER INDONESIA (BISMA) [INDONESIAN ATMOSPHERIC DATABASE] <http://bisma.sains.lapan.go.id/>

BISMA, June 2014



BISMA, Nov 2014





Parameters for Atmospheric Physics

Atmospheric Chemistry Parameters

SATELLITE

- MTSAT
- Aqua Parepare
- Terra Parepare
- Aqua Rumoh
- TERRA SURAB

AWS

- AMS Bandung
- AV AW AWS Makassar
- AMS FortZeck
- AMS Kotabaru
- AMS TSTBano Sari

RADAR / LIDAR

- Transferrable Radar
- 3-Band Radar Rain
- Equatorial Atmosphere Radar

OTHER INSTRUMENT

- AOPE
- Pyranometer
- Barometer
- Humidograph
- CO2

More >>

SATELIT		Jumlah : 4 SATELIT
Terra (Parepare)		>
Aqua (Parepare)		>
MTSAT		>
TRMM		>

Terra (Parepare) TAMPILKAN INFO ALAT

Task (MOD35) Profil Vertikal Atmosfer (MOD07) Raw

Waktu: TAMPILKAN INFO DATA

1.0329.mod35.hdf (91.67M) tgl data : 2014-10-28 03:29:00	
1.0159.mod35.hdf (271.9M) tgl data : 2014-10-28 01:59:00	
0.1505.mod35.hdf (111.06M) tgl data : 2014-10-27 15:05:00	
0.1328.mod35.hdf (90.62M) tgl data : 2014-10-27 13:28:00	
0.0246.mod35.hdf (107.89M) tgl data : 2014-10-27 02:46:00	

TRMM TAMPILKAN INFO ALAT

Info Alat TRMM


Nama Sumber Data/Alat	TRMM
Deskripsi	Unduh dari ftp server trmm
Lokasi	-
Posisi Lintang	-
Posisi Bujur	-
Lembaga/Badan Pemilik	NASA
Tahun Mulai Beroperasi	-

Curah Hujan (3B42RT)

Rentang Waktu: s/d TAMPILKAN INFO DATA

3B42RT.2014102821.7.bin.gz (231.81K) tgl. data : 2014-10-28 21:00:00	
3B42RT.2014102818.7.bin.gz (243.14K) tgl. data : 2014-10-28 18:00:00	
3B42RT.2014102815.7.bin.gz (232.49K) tgl. data : 2014-10-28 15:00:00	
3B42RT.2014102812.7.bin.gz (235.24K) tgl. data : 2014-10-28 12:00:00	

◀◀ 1/710 ▶▶



RADAR/LIDAR Jumlah : 2 RADAR/LIDAR

Equatorial Atmosphere Radar (EAR)	
Lidar (Kototabang)	

Equatorial Atmosphere Radar (EAR) TAMPILKAN INFO ALAT

Angin Meridional (Angin Selatan Positif) Angin Vertikal Angin Zonal (Angin Barat Positif) Raw

Rentang Waktu: s/d TAMPILKAN INFO DATA

EAR.ANGIN.MERIDIONAL.20131222.vwnd.csv (138.34K) tgl. data : 2013-12-22 00:00:00	
EAR.ANGIN.MERIDIONAL.20131221.vwnd.csv (138.34K) tgl. data : 2013-12-21 00:00:00	
EAR.ANGIN.MERIDIONAL.20131220.vwnd.csv (138.34K) tgl. data : 2013-12-20 00:00:00	
EAR.ANGIN.MERIDIONAL.20131219.vwnd.csv (138.34K) tgl. data : 2013-12-19 00:00:00	
EAR.ANGIN.MERIDIONAL.20131218.vwnd.csv (138.34K) tgl. data : 2013-12-18 00:00:00	
EAR.ANGIN.MERIDIONAL.20131217.vwnd.csv (138.34K) tgl. data : 2013-12-17 00:00:00	
EAR.ANGIN.MERIDIONAL.20131216.vwnd.csv (138.34K) tgl. data : 2013-12-16 00:00:00	
EAR.ANGIN.MERIDIONAL.20131215.vwnd.csv (122.12K) tgl. data : 2013-12-15 00:00:00	
EAR.ANGIN.MERIDIONAL.20131214.vwnd.csv (138.34K) tgl. data : 2013-12-14 00:00:00	
EAR.ANGIN.MERIDIONAL.20131213.vwnd.csv (104.00K) tgl. data : 2013-12-13 00:00:00	
EAR.ANGIN.MERIDIONAL.20131212.vwnd.csv (138.34K) tgl. data : 2013-12-12 00:00:00	

◀◀ 1/13 ▶▶

INSITU LAINNYA		Jumlah : 4 INSITU LAINNYA
CO2 Monitor (Watukosek)		>
AQMS		>
CO2 Monitor (Bandung)		>
Dasibi (Ozon Permukaan)		>

CO2 Monitor (Bandung)		TAMPILKAN INFO ALAT
CO2 (Karbon Dioksida) per 1 jam	CO2 (Karbon Dioksida) per 1 menit	
Rentang Waktu : <input type="text" value="yyyy-mm-dd"/> s/d <input type="text" value="yyyy-mm-dd"/>	<input type="button" value="cari"/>	TAMPILKAN INFO DATA
CO2.BDG.1j.20111227 (0.00B) tgl. data : 2011-12-27 00:00:00		↓
CO2.BDG.1j.20111226 (864.00B) tgl. data : 2011-12-26 00:00:00		↓
CO2.BDG.1j.20111225 (816.00B) tgl. data : 2011-12-25 00:00:00		↓
CO2.BDG.1j.20111224 (816.00B) tgl. data : 2011-12-24 00:00:00		↓
CO2.BDG.1j.20111223 (1.01K) tgl. data : 2011-12-23 00:00:00		↓



Bisma (versi Beta)	
<input type="button" value="Home"/>	<input checked="" type="button" value="Parameter Fisika Atmosfer"/> <input type="button" value="Parameter Kimia Atmosfer"/>
Visible Data hasil pengukuran dari alat MTSAT	
Profil Vertikal Atmosfer (MOD07) Data hasil pengukuran dari alat Terra (Parepare)	
Profil Vertikal Atmosfer (MOD07) Data hasil pengukuran dari alat Aqua (Parepare)	
IR4 Data hasil pengukuran dari alat MTSAT	
IR3 Data hasil pengukuran dari alat MTSAT	
IR2 Data hasil pengukuran dari alat MTSAT	
IR1 Data hasil pengukuran dari alat MTSAT	
Data AWS (Temperatur, Curah Hujan, Angin, UV, Radiasi Matahari) Data hasil pengukuran dari alat AWS (Tanjung Sari)	
Data AWS (Temperatur, Curah Hujan, Angin, UV, Radiasi Matahari) Data hasil pengukuran dari alat AWS (Bandung)	
Curah hujan (3B42RT) Data hasil pengukuran dari alat TRMM	

<input type="button" value="Home"/>	<input type="button" value="Parameter Fisika Atmosfer"/> <input checked="" type="button" value="Parameter Kimia Atmosfer"/>
O3 (Ozon) Permukaan Data hasil pengukuran dari alat Dasibi (Ozon Permukaan)	
Data AQMS (CH4, NMHC, THC, CO, NO, NO2, NOx, O3, SO2, PM10) per 30 Menit Data hasil pengukuran dari alat AQMS	
Data AQMS (CH4, NMHC, THC, CO, NO, NO2, NOx, O3, SO2, PM10) per 3 menit Data hasil pengukuran dari alat AQMS	
CO2 (Karbon Dioksida) per 1 jam Data hasil pengukuran dari alat CO2 Monitor (Bandung)	
CO2 (Karbon Dioksida) Data hasil pengukuran dari alat CO2 Monitor (Watukosek)	



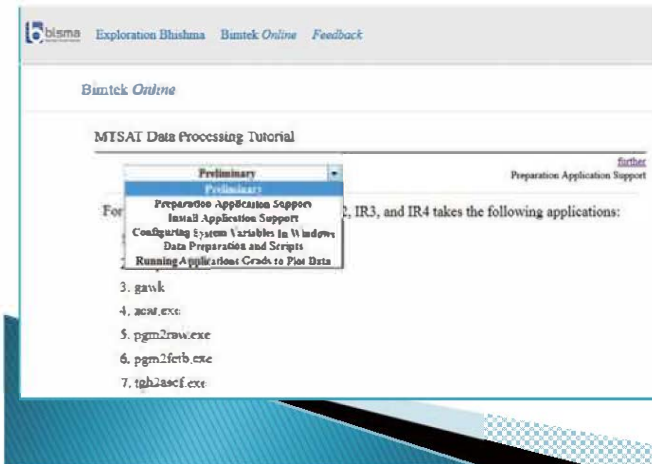
Technical Guidance Online

Buntek online is a feature that gives a tutorial Bhishma processing some of the data that is in Bhishma.

Here is a link to

[MTSAT Data Processing](#)

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MTSAT Data Processing Tutorial

Preliminary

[further](#)
Preparation Application Support

For both data processing MTSAT IR1, IR2, IR3, and IR4 takes the following applications:

1. Grads
2. Gzip
3. gawk
4. zcat.exe
5. pgm2raw.exe
6. pgm2ftb.exe
7. tgh2ascf.exe

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[index](#)

[further](#)
Preparation Application Support

MTSAT Data Processing Tutorial

[previous](#)
Preliminary

Preparation Application Support

[further](#)
Install Application Support

Please download the application support for MTSAT data processing, by clicking the link below:

1. [Grads](#)
2. [Gzip](#)
3. [gawk](#)
4. [zcat.exe](#)
5. [pgm2raw.exe](#)
6. [pgm2ftb.exe](#)
7. [tgh2ascf.exe](#)

MTSAT Data Processing Tutorial

[previous](#)
Preparation Application Support

Install Application Support

[further](#)
Configuring System Variables In Windows

When finished downloading the required application, the next is doing the install for each application.

1. Install Applications Grads

To install the application for Men- grads please *double click* the downloaded *installer* with filename "grads-2.0 s4 oga.1.win32_superpack.exe". And follow the instructions provided when installing. No special configuration is done during install, you just need to press the *next* button and *finish*. Ensure grads applications stored in the directory C:\GrADS20 (*default setting*)

2. Install Applications GZIP

To install the application for Men- gzip please *double click* the downloaded *installer* with the file name "gzip-1.3.12-1-setup.exe". And follow the instructions provided when installing. No special configuration is done during install, you just need to press the *next* button and *finish*.

3. Install Applications gawk

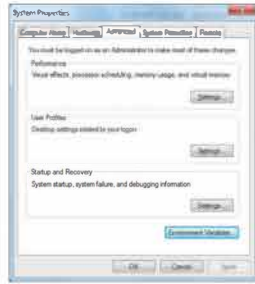
Same thing with installing GZIP, to install gawk application for Men- please *double click* the downloaded *installer* with filename "gawk-3.1.6-1-setup.exe". And follow the instructions provided when installing. No special configuration is done during install, you just need to press the *next* button and *finish*.

4. Copy and Paste zcat.exe, pgm2raw.exe, pgm2ftb.exe, tgh2ascf.exe, tail.exe

Create a folder in C:\ with the name Pelatihan\MTSAT and create folders within folders Pelatihan\MTSAT support. Copy and Paste application with the file name "zcat.exe", "pgm2raw.exe", "pgm2ftb.exe", "tgh2ascf.exe", "tail.exe" to the folder C:\Pelatihan\MTSAT\ support \ that was created earlier

To be able to support application MTSAT data preparation, first need to configure the Windows system variables, by adding the path of supporting applications that are stored in the directory C:\PelatihanMTSAT\support. Here are the steps:

1. right-click My Computer and select Properties
2. System Properties window will appear and select Advanced system settings.
3. Select the Advanced tab as shown below:



4. Click the Environment Variables button.

5. Environment Variables window will appear



6. In the System Variables, find the variable in the Variable column named Path, select it and click the Edit button.

7. It would appear form the Edit System Variables. There are two (2) input as shown.



8. Edit Variable value add the final semicolon (;), C:\PelatihanMTSAT\support (note the semicolon (;)), and click the OK button.

9. Press the OK button in the Environment Variables window.

10. Press the OK button on the System Properties window.



In this tutorial MTSAT IR1 will process data at 00 UTC 2012-01-01 date. To get started please follow the steps below:

1. Create a directory with the name of "if" in the directory C:\PelatihanMTSAT, and in the directory "if" create a directory "IR1".
2. Download and save the file [MTIR1_2012010100.pgm.gz](#) to the directory C:\PelatihanMTSAT\if\IR1
3. Download and save the file [MTS212050908CAL.dat.gz](#) to the directory C:\PelatihanMTSAT\if
4. Open the application editor (notepad), copy and paste the script below:

```
echo off
set _pgmfile = MTIR1_2012010100.pgm
set _calfile = IR1CAL.dat
gzip -dc C:\PelatihanMTSAT\if\IR1\MTIR1_2012010100.pgm.gz > %_pgmfile%
xcat C:\PelatihanMTSAT\if\MTS212050908CAL.dat.gz | awk -F "IR1 Temperature / {print $ 2}" > %_calfile%
```

save the script with the name "mtsread1.bat" to the directory C:\PelatihanMTSAT\ though, make sure the Save As Type option is set to All files

5. Open the application editor (notepad), copy and paste the script below:

```
pgm2raw.exe MTIR1_2012010100.pgm IR1cal.txt
```

save the script with the name "pgm2raw.bat" to the directory C:\PelatihanMTSAT\ though, make sure the Save As Type option is set to All files

6. Run the second script by double clicking the file "mtsread1.bat" and then run "pgm2raw.bat".
7. After running "mtsread1.bat", in directory C:\PelatihanMTSAT\if it will appear two files named "IR1CAL.dat", and "MTIR1_2012010100.pgm"
8. After running the script "pgm2raw.bat", in directory C:\PelatihanMTSAT\ will appear if a file with the name "TB2001_2012010100.raw"



To perform a data plot with Grads, be prepared ctnlyra files. Here are the steps to create a file ctl

1. Open the application editor (notepad), copy and paste the script below

```
!rdev template options
DSET C:\PelatihanMTSAT\if\TB2001_2012010100.raw
TITLE TBB
Undef-999
XDEF LINEAR 70 025 2800 0:05
YDEF 2000 0:05 -69 975 LINEAR
Linear ZDEF 1 1 1
TDEF 24 LINEAR.00m01Jan12 1d
VARS 1
IR1 0 -1,40,1 (kelvin)
ENDVARS
```

save the script with the file name "pelatihanmtsat.ctl" and stored in the directory C:\GrADS20\data, make sure the Save As Type option is set to All files.

2. Run the program by clicking Grads

Start -> All Programs -> Grads 2.0 -> Grads

It would appear the two (2) new window. The first window is the place to give orders, and the 2nd is the window to display the results of the plot

3. Type in the first window: open pelatihanmtsat.ctl and press the enter key

4. Then type: set groot hires and press the enter key

5. Then type: csmoot set on and press the enter key

6. Then type: set lat -11 11 and press the enter key

7. Then type: set lon 90 141 and press the enter key

8. Then type: d IR1 = 100 and press the enter key

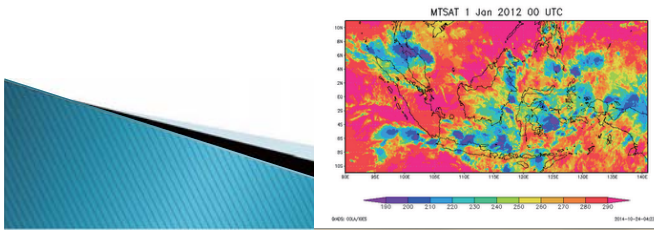
9. Then type: charn and press the enter key

10. Then type: title draw MTSAT IR1 January 1, 2012 00 UTC and press the enter key

11. To save the plot in the form of images with extension "PNG", type: printin C:\PelatihanMTSAT\if\mtsat_ir1_jjan201200out.png png white and press the enter key

images that are stored with the file name mtsat_ir1_jjan201200out.png.

The result will be as shown below:



THANK YOU



**THE 6th INDONESIA JAPAN JOINT SCIENTIFIC SYMPOSIUM 2014
(IJSS 2014)**



**Universitas Gadjah Mada, Indonesia
29 – 30 October**

University Club (UC) Gadjah Mada
Jl. Pancasila No. 2, Bulaksumur, Yogyakarta

