Discovering the Data & Data products of INCOIS

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October 29, 2021

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'Discovery and Use of Operational Ocean Data Products and Services' , 25 Oct - 05 Nov, 2021

INCOIS as Data Centre

- The central repository for marine data in the country, receives voluminous oceanographic data
- Data provides information on physical, chemical, biological and geological parameters
- Spatial, temporal data and data products at different resolutions, and levels
- Data pre-processing, post-processing, quality control, dissemination and archives

Affiliations:

- Designated as the National Oceanographic Data Centre by the International Oceanographic Data Exchange Programme (IODE) of International Oceanographic Commission (IOC)
- Indian Ocean Global Ocean Observing System (IOGOOS)

http://www.iocperth.org/iogoos

Data types	Parameters
Remote sensing	
• MODIS/Terra and Aqua	• air/sea/ice surface temperature, cloud cover
• OCM-1&2/Oceansat-2	• chlorophyll, wind fields over ocean surface
• TMI	• sea level, rainfall, SST
• Quicksat & ASCAT	• wind, sea level pressure, ice
In-situ	
• Argo, Bio-Argo	• temperature/salinity/oxygen/pH
• Moored buoy(OMNI)	• air pressure/temp, humidity, current, SST
• Drifting buoy	• wind speed/direction, surface current
• Tide gauge	• tide heights, air/water temperature
• Bottom pressure recorder	• water column height
• Current meter	• near-surface current
• HF Radar	• surface currents, ocean waves
• Wave Rider Buoy	• wave/tide height, ocean currents
• CTD	• conductivity, temperature, depth
• XBT	• water column temperature

Model data: SST, MLD, SSH, SWH, Wind, etc. (Upon request)

DATA PRODUCTS:Types & Classifications

- Types:
  - processing level
  - output scale
  - coverage area

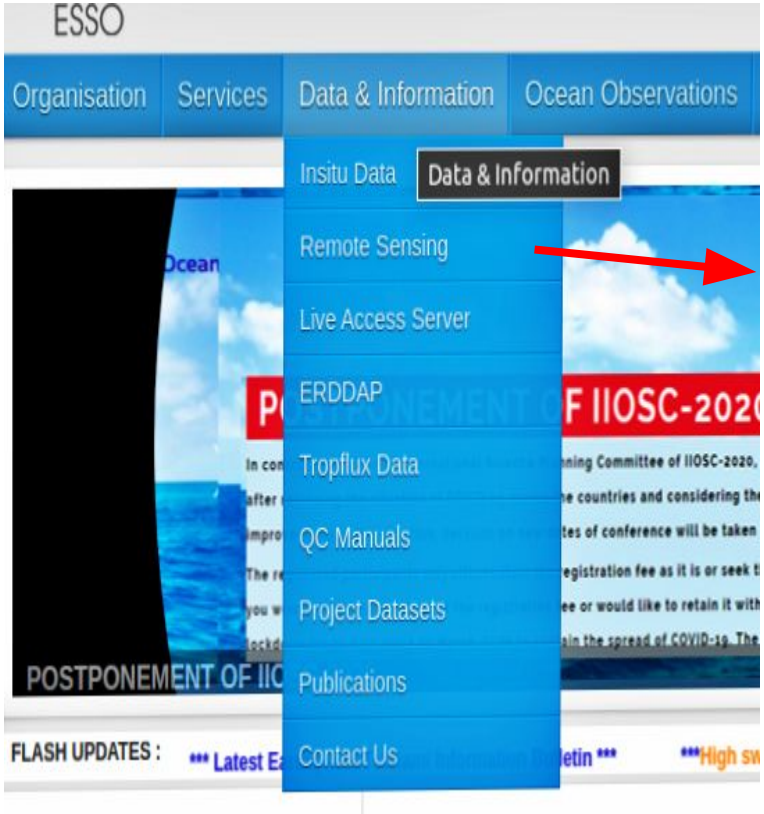
- Classification:
  - *standard products* :- direct information from satellite with necessary corrections (radiometer/geometric)
  - *value-added products* :- standard products processed as per user requirements (merged products)
  - *derived products* :- further data processing/analysing by the providers from the original data (SST)

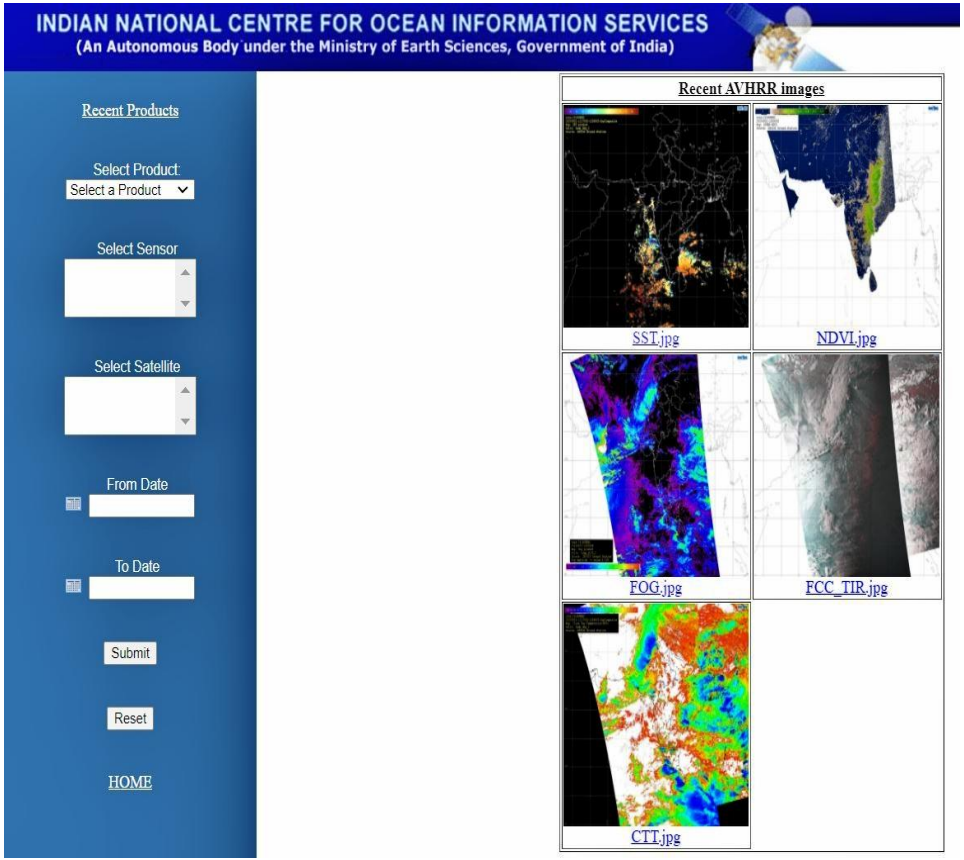
Data Discovery Platforms

- MoES-NOAA: OMNI-RAMA joint data portal
- In-situ data & information portal
- Remote sensing portal
- Live access server (LAS)
- ERDDAP-NOAA
- TropFlux portal

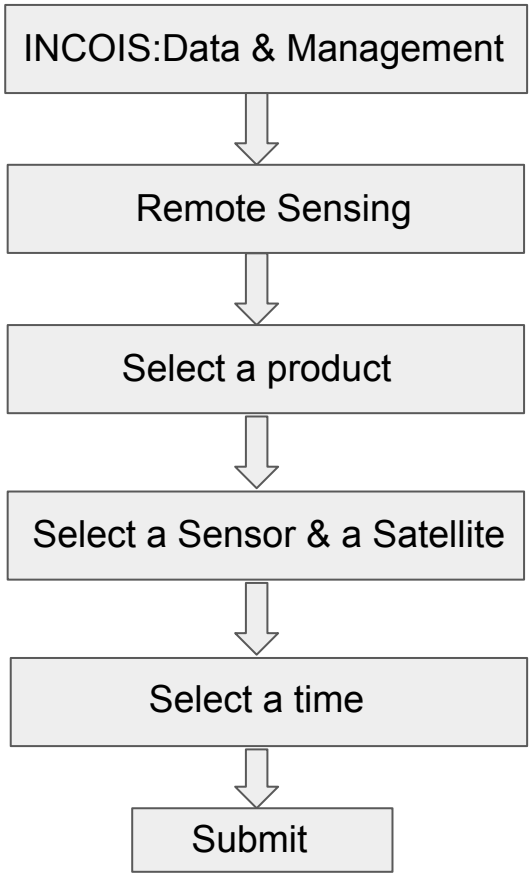
Note: Some portal may require authentication

Remote Sensing





Flow Chart



Output

- JPG: Image
- GeoTiff: Informations

Recent Products

Select Product:
Sea Surface Temp

Select Sensor
AVHRR
MODIS

Select Satellite
METOP-1
METOP-2
NOAA-17

From Date
01/08/2020

To Date
30/08/2020

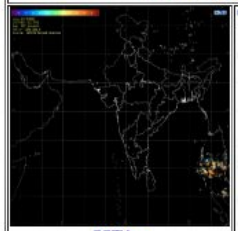
Submit

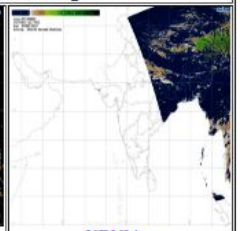
Reset

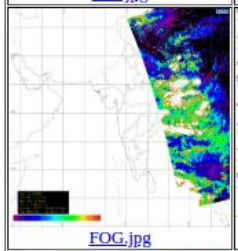
HOME

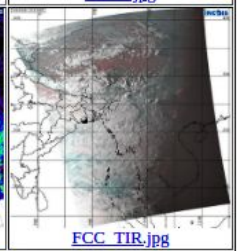
For archive data kindly contact pattabhi@incois.gov.in

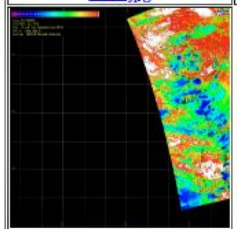
Recent AVHRR images


SST.jpg


NDVI.jpg


FOG.jpg


FCC_TIR.jpg


CTT.jpg

List of Images

20200830-174100Z-metop-1-sst.jpg
Download JPG GeoTiff

20200830-155610Z-metop-1-sst.jpg
Download JPG GeoTiff

20200830-142140Z-metop-1-sst.jpg
Download JPG GeoTiff

20200830-142140Z-155610Z-NightComposite-metop-1-sst.jpg
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20200830-044720Z-metop-1-sst.jpg
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20200829-161710Z-metop-1-sst.jpg
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20200826-153910Z-172130Z-NightComposite-metop-1-sst.jpg
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20200825-155940Z-metop-1-sst.jpg
Download JPG GeoTiff

20200825-142430Z-metop-1-sst.jpg
Download JPG GeoTiff

20200825-142430Z-155940Z-NightComposite-metop-1-

In Situ

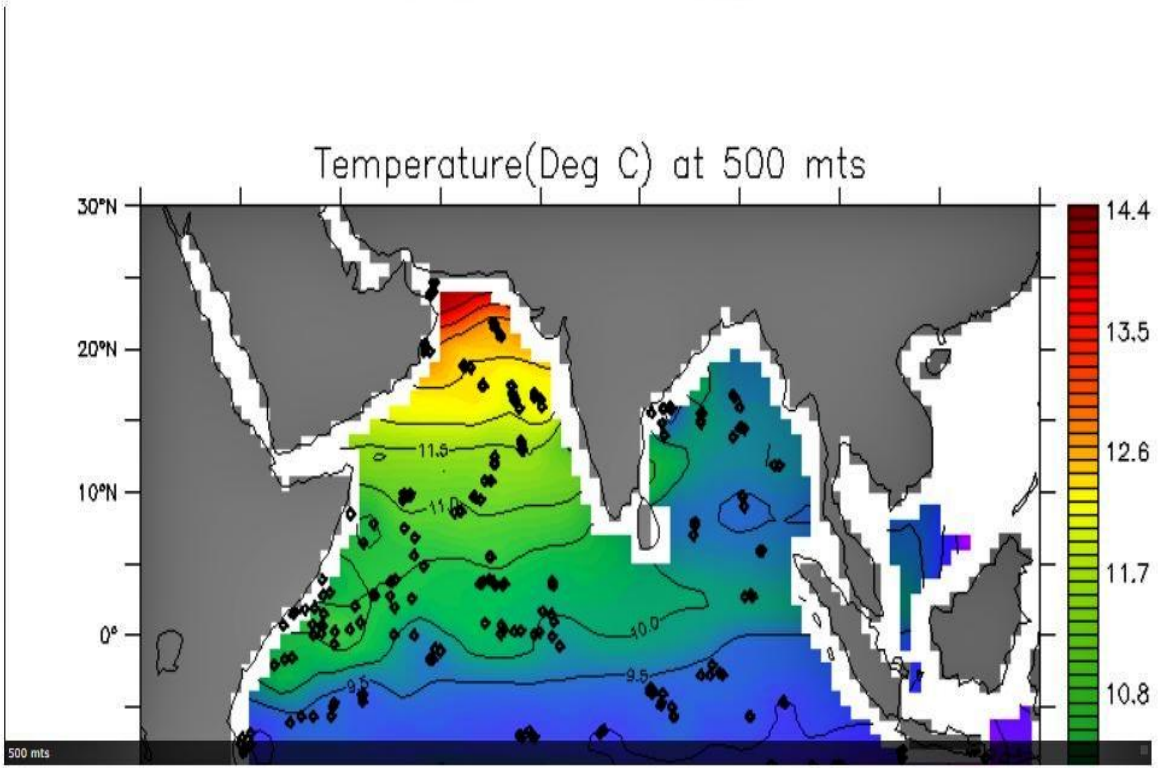
INCOIS HOME >> Data & Information >> In Situ Data >> Argo

- Argo Home
- Data Access
- Regional Data Centre
- APEX User Manuals
- Active Floats in EEZ
- Argo Data Viewer

Objectively Analysed Products

Year : 2004 Month: Februan Type: Temperature

Temperature Products for the Year: 2004 and month: February



*Output available for different depth levels

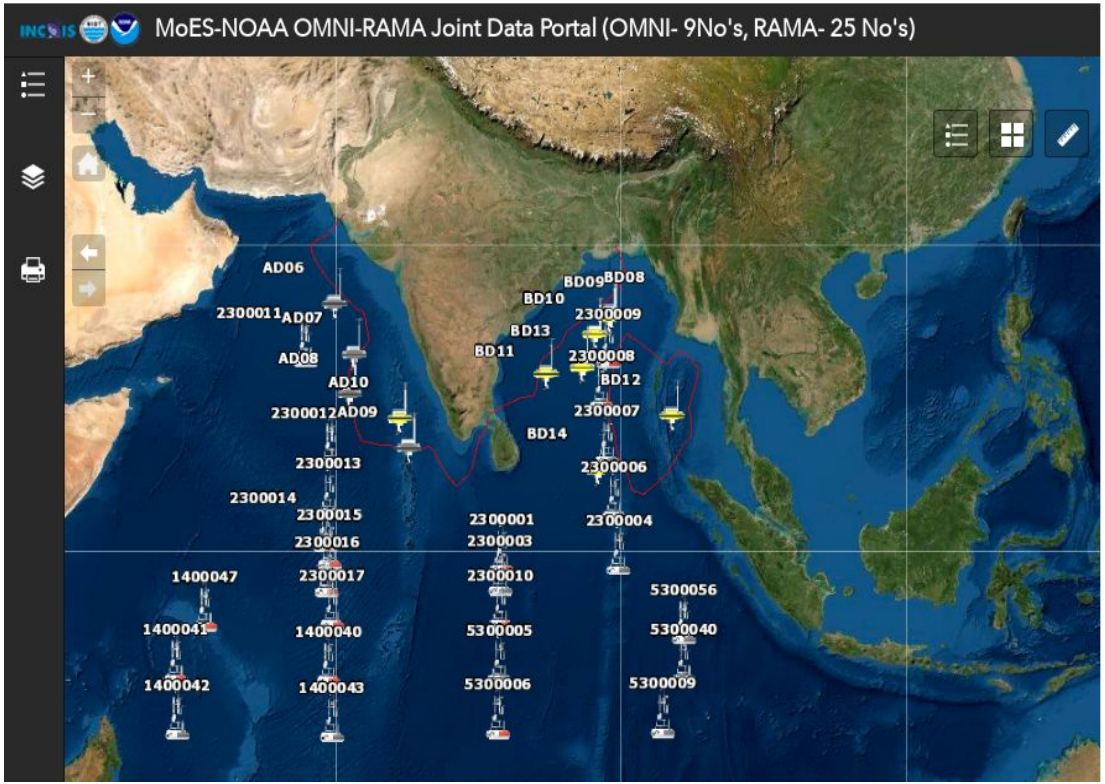
MoES-NOAA: OMNI-RAMA Portal

OMNI

- Ocean Moored buoy Network for Northern Indian (OMNI)
- 12 OMNI buoys collect and transmit high resolution real-time data for upper ocean, surface meteorology, and wave parameters

RAMA

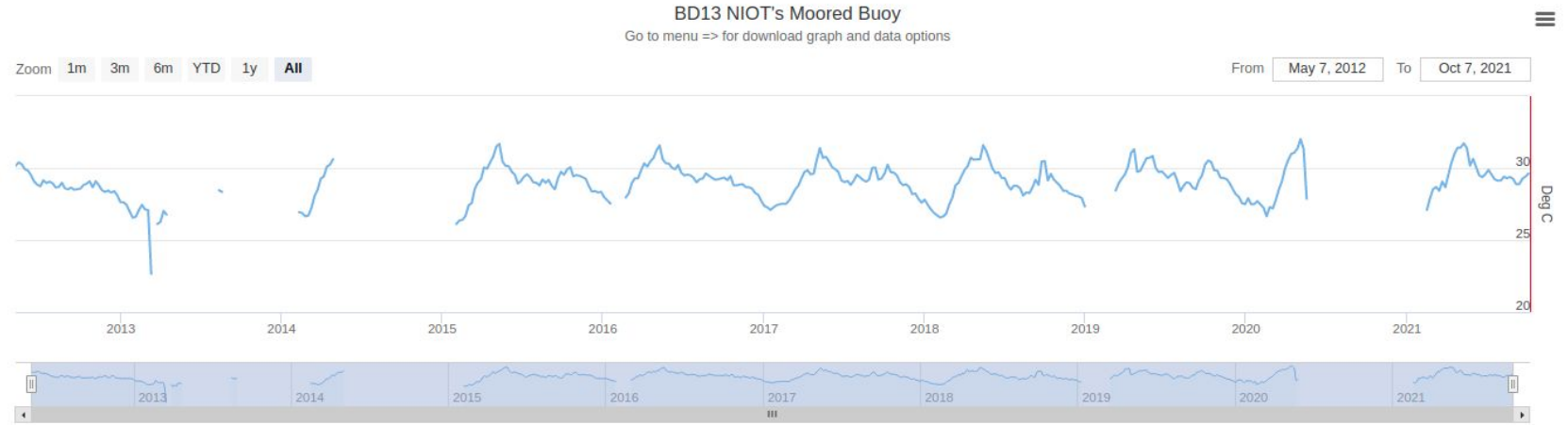
- Research Moored Array for African-Asian-Australian Monsoon Analysis and Prediction, designed to study the Indian Ocean monsoons
- Physical oceanographic and meteorological parameters



Data Extraction-OMNI

- Select an ID and preview metadata
- Prompt new window, select- parameters, time-range
- Save output either as image, .csv, etc.

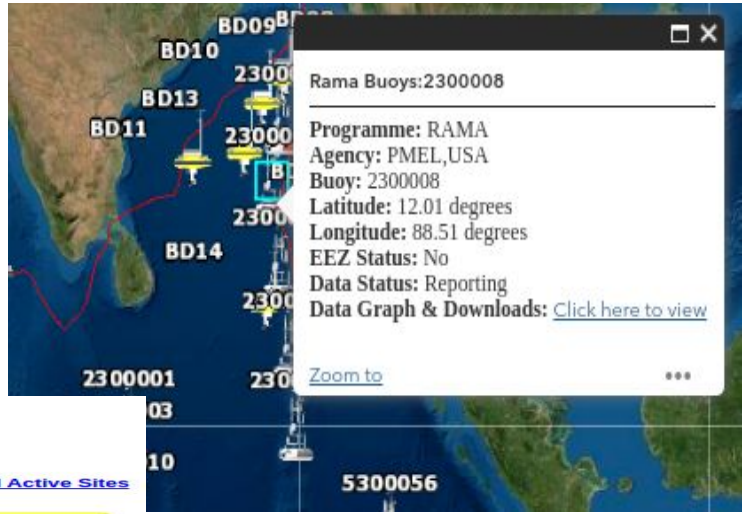
Select Parameter Water Temperature @ 001m Submit

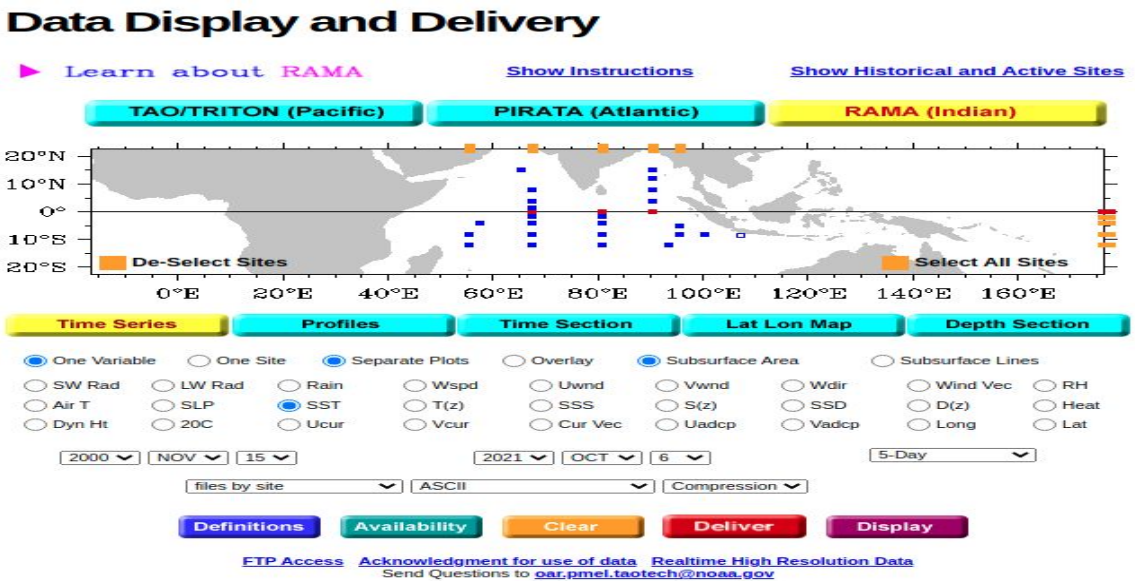


save

Data Extraction-RAMA

- Select an ID and preview data
- Select parameters, range, depth (if any)
- Check availability, download the output via Deliver cap





Output:
ASCII, .NC, etc.

ERDDAP

Easier access to scientific data

- Serve different type of data at unifies platform
- Simple and consistent data server to download subsets of scientific datasets
- Outputs are available in many formats as as .html table, ESRI .asc and .csv, Google Earth .kml, OPeNDAP binary, .mat, .nc, ODV .txt, .csv, .tsv, .json, and .xhtml
- ERDDAP can also return a .png or .pdf image with a customized graph or map.

Protocol	Description
griddap datasets	Griddap lets you use the OPeNDAP hyperslab protocol to request data subsets, graphs, and maps from gridded datasets (for example, satellite data and climate model data). griddap documentation
tabledap datasets	Tabledap lets you use the OPeNDAP constraint/selection protocol to request data subsets, graphs, and maps from tabular datasets (for example, buoy data). tabledap documentation
"files" datasets	ERDDAP's "files" system lets you browse a virtual file system and download source data files. WARNING! The dataset's metadata and variable names in these source files may be different than elsewhere in ERDDAP! You might prefer using the dataset's Data Access Form instead. "files" documentation
WMS datasets	The Web Map Service (WMS) lets you request an image with data plotted on a map. WMS documentation

ERDDAP HOME > GRIDDED DATASETS > MAKE A GRAPH

Grid DAP Data	Sub-set	Table DAP Data	Make A Graph	WMS	Title	Sum-mary	Meta-data	Back-ground Info	RSS	E mail	Institution	Dataset ID
data			graph	M	AMSR2 Monthly Global Data		M	background	RSS		INCOIS	AMSR2_mnt_Global
data			graph	M	AMSRE 3Day Global Data		M	background	RSS		INCOIS	AMSRE_3DAY_GLOBAL
data			graph	M	AMSRE Monthly Global Data		M	background	RSS		INCOIS	AMSRE_MONTHLY_GLOBAL
data			graph	M	Daily ASCAT global wind field		M	background	RSS		ifremer	ascat_daily_datasets
data			graph	M	Daily-OI-V2, final, Data (Ship, Buoy, AMSR-E, AVHRR, GSFC-ice)		M	background	RSS		INCOIS	NOAA_AVHRR_AMSR_datasets
data			graph	M	Daily-OI-V2, final, Data (Ship, Buoy, AVHRR, GSFC-ice)		M	background	RSS		INCOIS	NOAA_AVHRR_datasets
data			graph	M	Data from a local source.		M	background	RSS		???	AMSR2_3day_Global
data			graph	M	INCOIS ARGO 10 Day data Kessler-McCreary Methodology		M	background	RSS		INCOIS	incois_argo_10day_McCreary
data			graph	M	INCOIS ARGO 10 day data Variational Analysis Methodology		M	background	RSS		INCOIS	incois_argo_10d_VAM
data			graph	M	INCOIS ARGO Monthly data Kessler-McCreary Methodology		M	background	RSS		INCOIS	incois_argo_mnt_McCreary
data			graph	M	INCOIS ARGO Monthly data Variational Analysis Methodology		M	background	RSS		INCOIS	incois_argo_mnt_VAM
data			graph	M	INCOIS argo SST data Weekly		M	background	RSS		INCOIS	incois_argo_sst_weekly
data			graph	M	INCOIS Oceansat 2 OCM Data		M	background	RSS		INCOIS	incois_oceansat2_datasets
data			graph	M	INCOIS Quickscat Daily Data		M	background	RSS		INCOIS	incois_quickscat_daily_datasets
data			graph	M	INCOIS Quickscat Monthly Data		M	background	RSS		INCOIS	incois_quickscat_mnt_datasets
data			graph	M	INCOIS TMI 3Day Data		M	background	RSS		INCOIS	incois_tmi_3day_datasets
data			graph	M	INCOIS TMI Monthly Data		M	background	RSS		INCOIS	incois_tmi_mnt_datasets
data			graph		INCOIS Value Added Products		M	background	RSS		INCOIS	incois_valueadded_products_datasets
data			graph	M	IRS P4 OCM-Chlorophyll		M	background	RSS		INCOIS	IRS_chlorophyll_datasets
data			graph	M	Monthly ASCAT global wind field		M	background	RSS		ifremer	ascat_mnt_datasets

Dataset Title: **AMSR2 Monthly Global Data** RSS
Institution: INCOIS (Dataset ID: AMSR2_mnt_Global)
Information: Summary | License | Metadata | Background | Data Access Form

Graph Type: surface
X Axis: longitude
Y Axis: latitude
Color: SST

Dimensions	**Start**	**Stop**
time (UTC)	specify just 1 value →	2020-07-15T00:00:00Z
latitude (degrees_north)	-30.0	30.0
longitude (degrees_east)	30.0	120.0

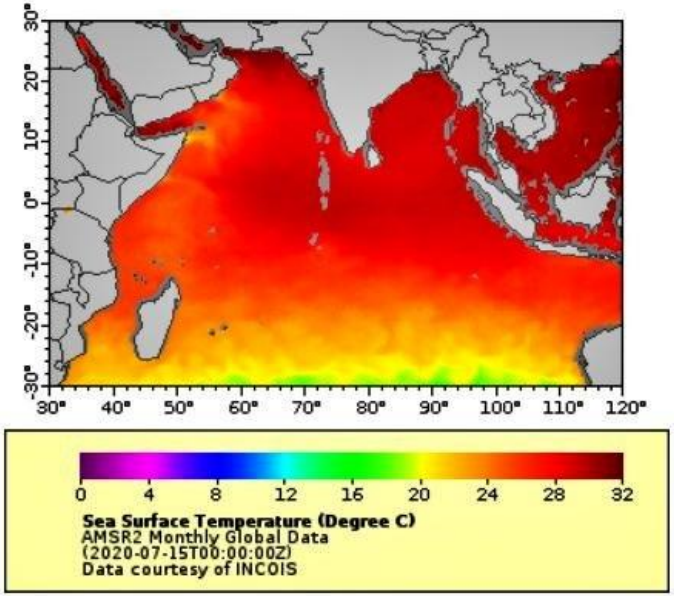
Graph Settings

Color Bar: Continuity: Scale:
Minimum: Maximum: N Sections:
Draw land mask:
Y Axis Minimum: Maximum: Ascending

Redraw the Graph (Please be patient. It may take a while to get the data.)

Optional:
Then set the File Type: .htmlTable (File Type information)
and Download the Data or an Image
or view the URL: /erddap/griddap/AMSR2_mnt_Global.htmlTable?SST%5B(2020-07-15T0
(Documentation / Bypass this form)

Click on the map to specify a new center point.
Zoom: Data | Out 8x | Out 2x | Out | In | In 2x | In 8x



Set output file type as your choice, viz. png, jpeg, pdf, etc.

Live Access Server

- Web server designed to provide flexible access to geo-referenced scientific data
- It provides visualization, comparison and substituting of multi-dimensional scientific data for web users
- LAS functions as a virtual window, supports Windows, Unix / Linux platform
- This is Ferret based application, though tools (Matlab,GrADS) can also be used
- It is capable of only accessing data in NetCDF form
- LAS in INCOIS (I-LAS) is being maintained since 2010

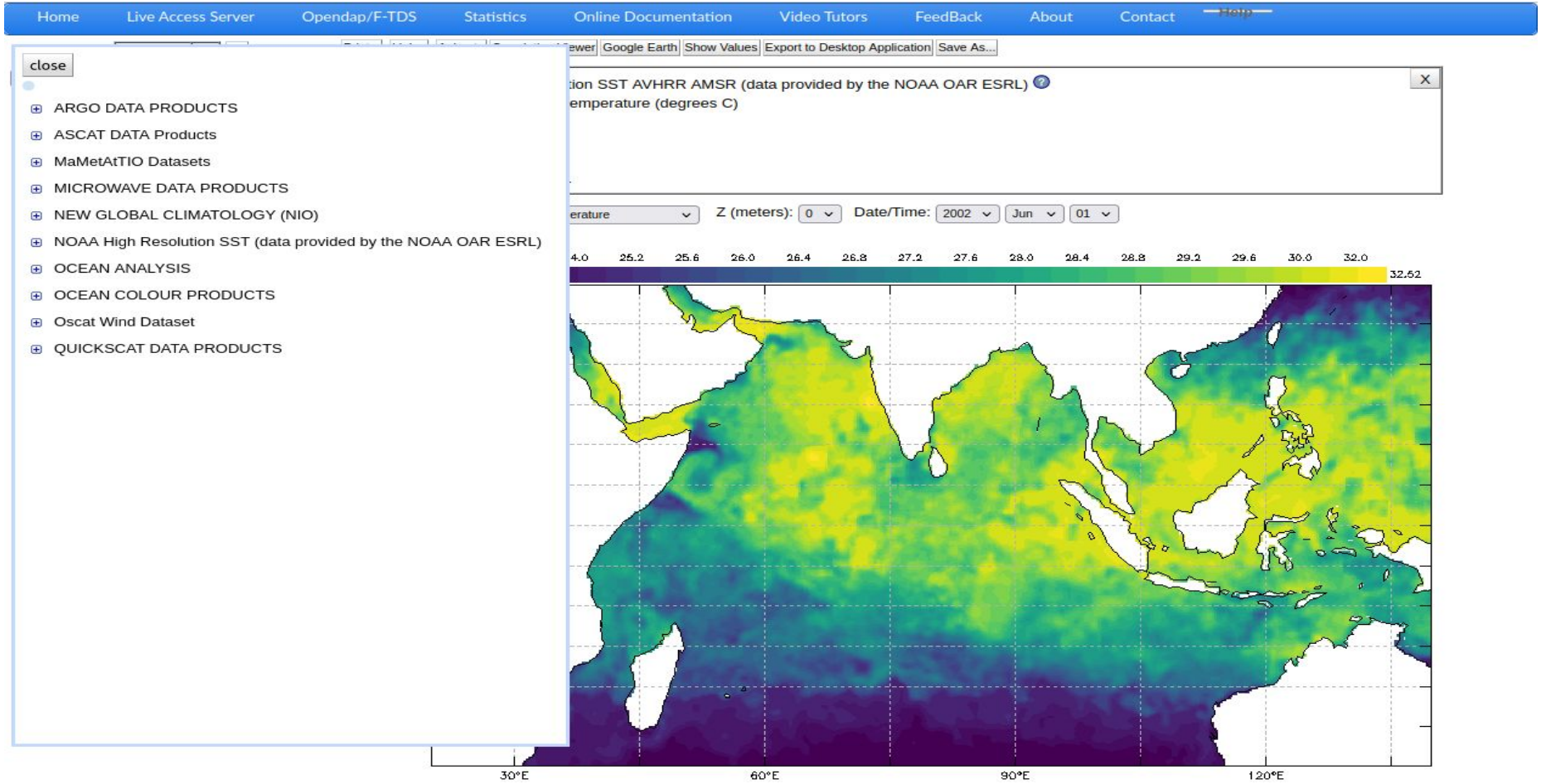
Cntd...

- Visualize data on-the-fly with graphics
- Request customize variables or subsets in a choice of formats
- Provide background references about the datasets (metadata)
- Enable feature for comparison of plots with different datasets
- Provide variations in output and in downloading files
- Documentation, Video tutorial, and Contact to the Admin

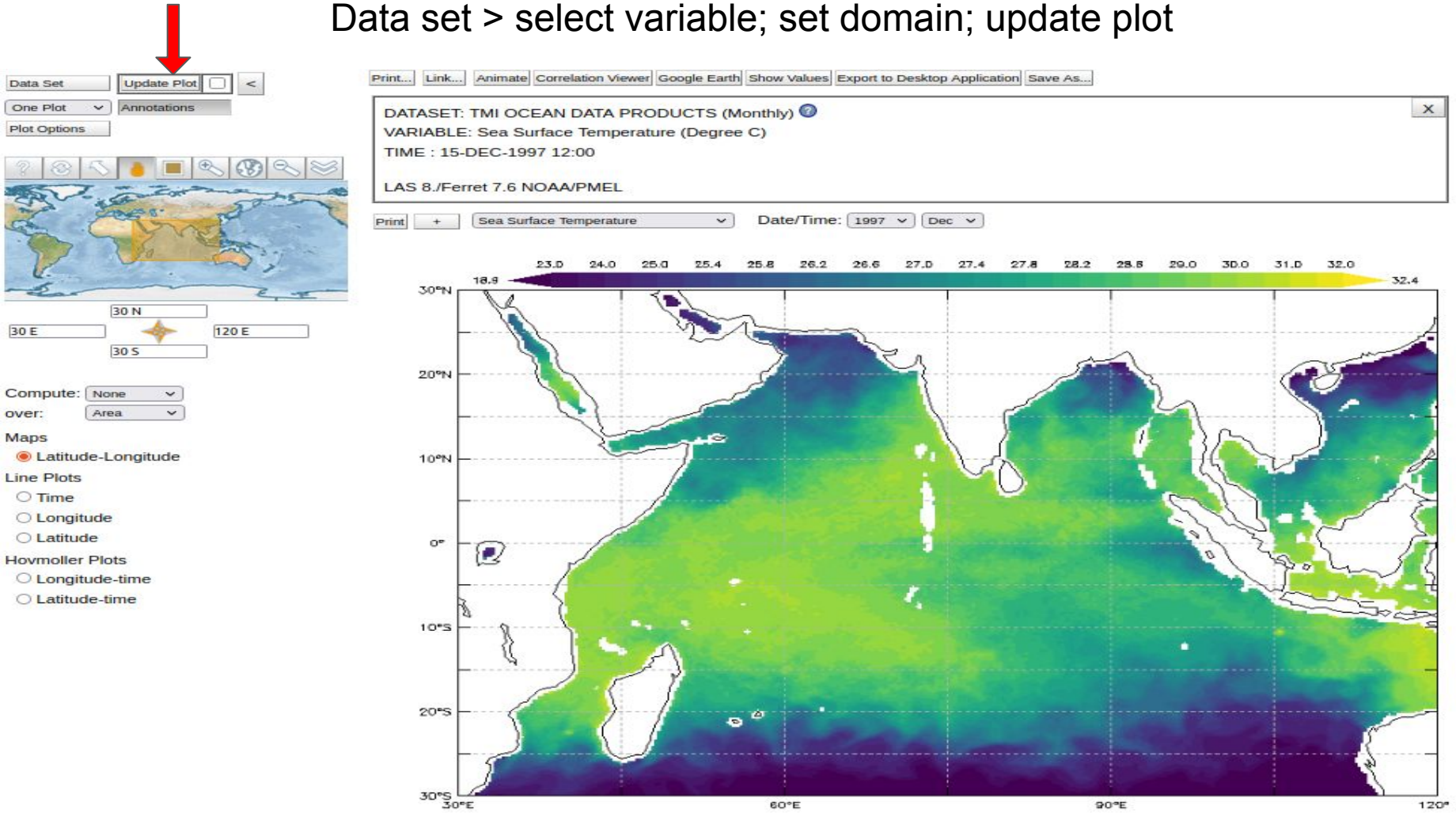
List of products on I-LAS

- Argo derived Products
  - Agro derived products
  - Value added products
  - Gridded products
- ASCAT wind product
  - wind speed and wind stress
- Microwave data products
  - AMSR-E & AMSR-2
  - TMI
- NOAA
  - AVHRR & AVHRR-AMSR
- New Global Climatology (NIO)
  - Temperature and Salinity
- Ocean colour products
  - OCM-1 : Chlorophyll
  - OCM-2 : Chlorophyll-a

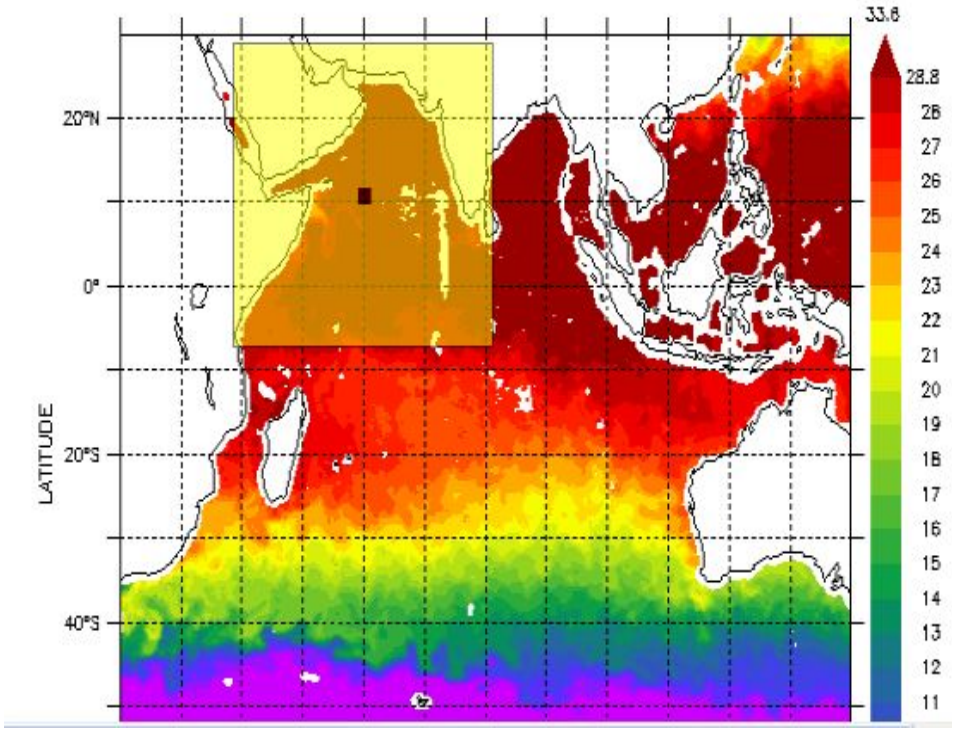
LAS > Data set

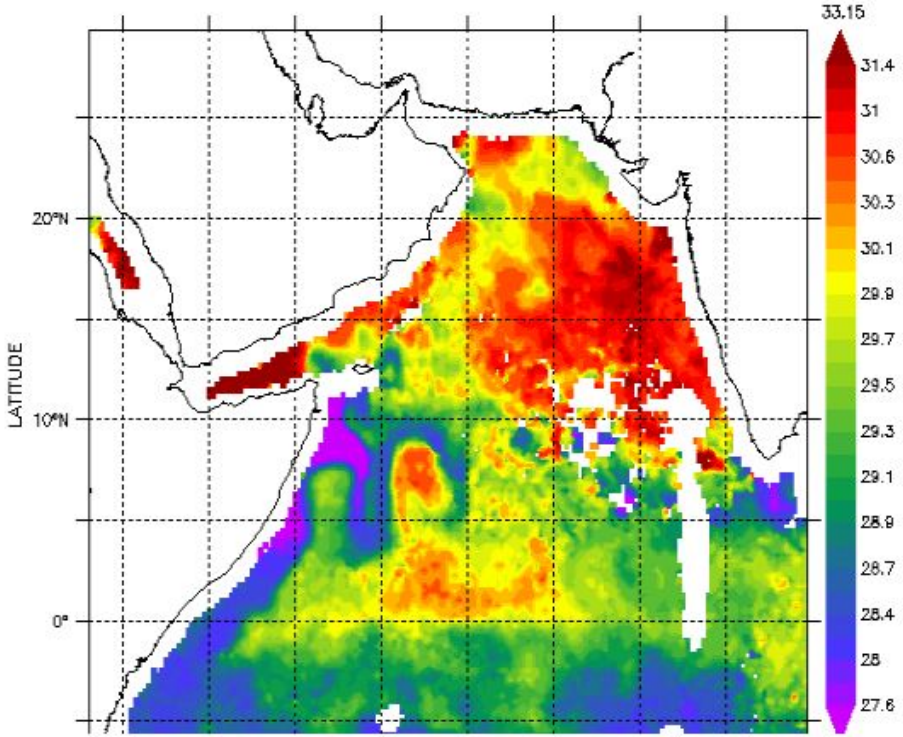

Home
Live Access Server
Opendap/F-TDS
Statistics
Online Documentation
Video Tutors
FeedBack
About
Contact
Google Earth
Show Values
Export to Desktop Application
Save As...
close
ARGO DATA PRODUCTS
ASCAT DATA Products
MaMetAtTIO Datasets
MICROWAVE DATA PRODUCTS
NEW GLOBAL CLIMATOLOGY (NIO)
NOAA High Resolution SST (data provided by the NOAA OAR ESRL)
OCEAN ANALYSIS
OCEAN COLOUR PRODUCTS
Oscat Wind Dataset
QUICKSCAT DATA PRODUCTS
ion SST AVHRR AMSR (data provided by the NOAA OAR ESRL)
emperature (degrees C)
Z (meters):
Date/Time:
2002
Jun
01
25.2
25.6
26.0
26.4
26.8
27.2
27.6
28.0
28.4
28.8
29.2
29.6
30.0
32.0
32.52
30°E
60°E
90°E
120°E

Data set > select variable; set domain; update plot

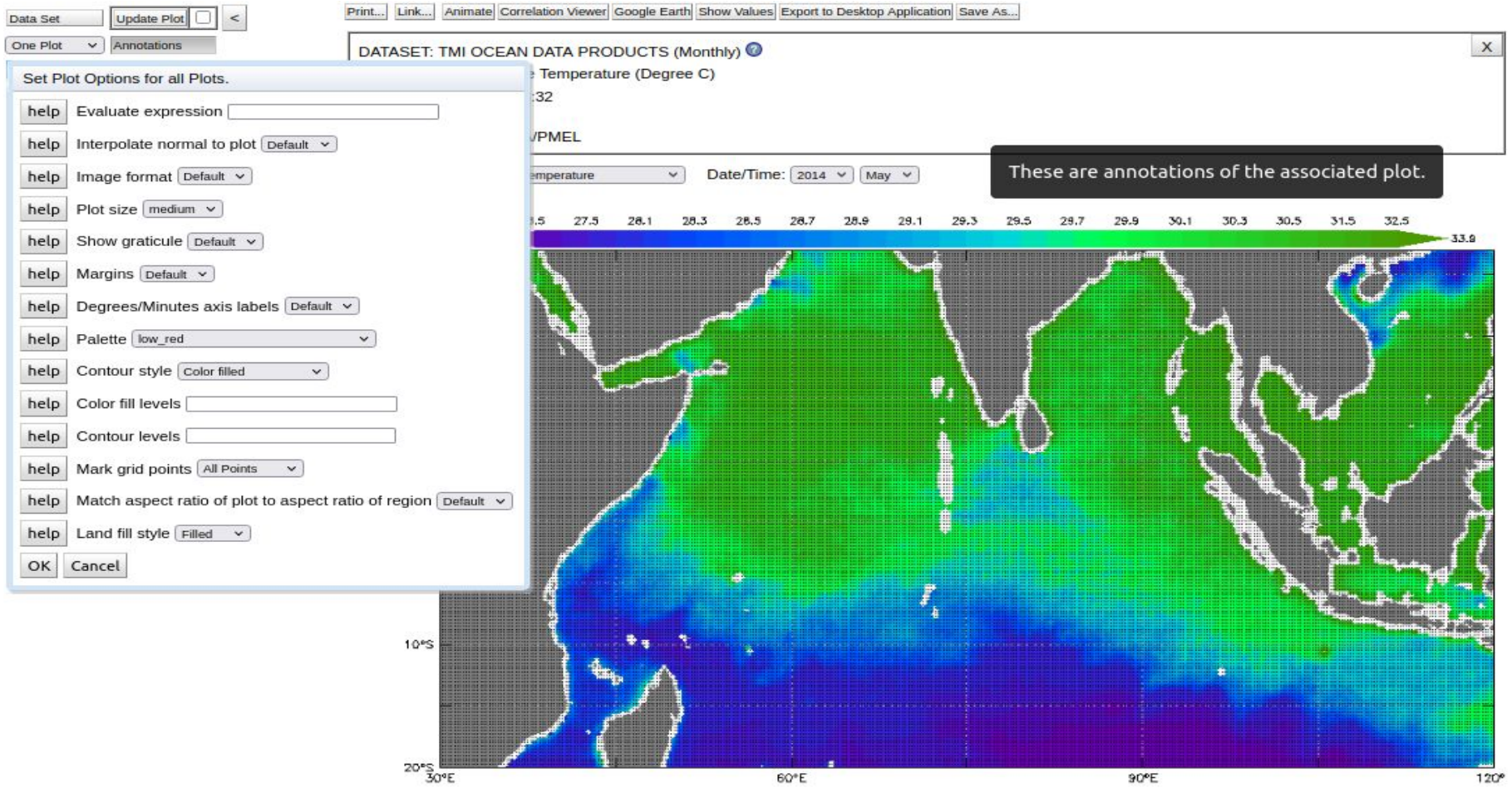


Output image > select area > update plot

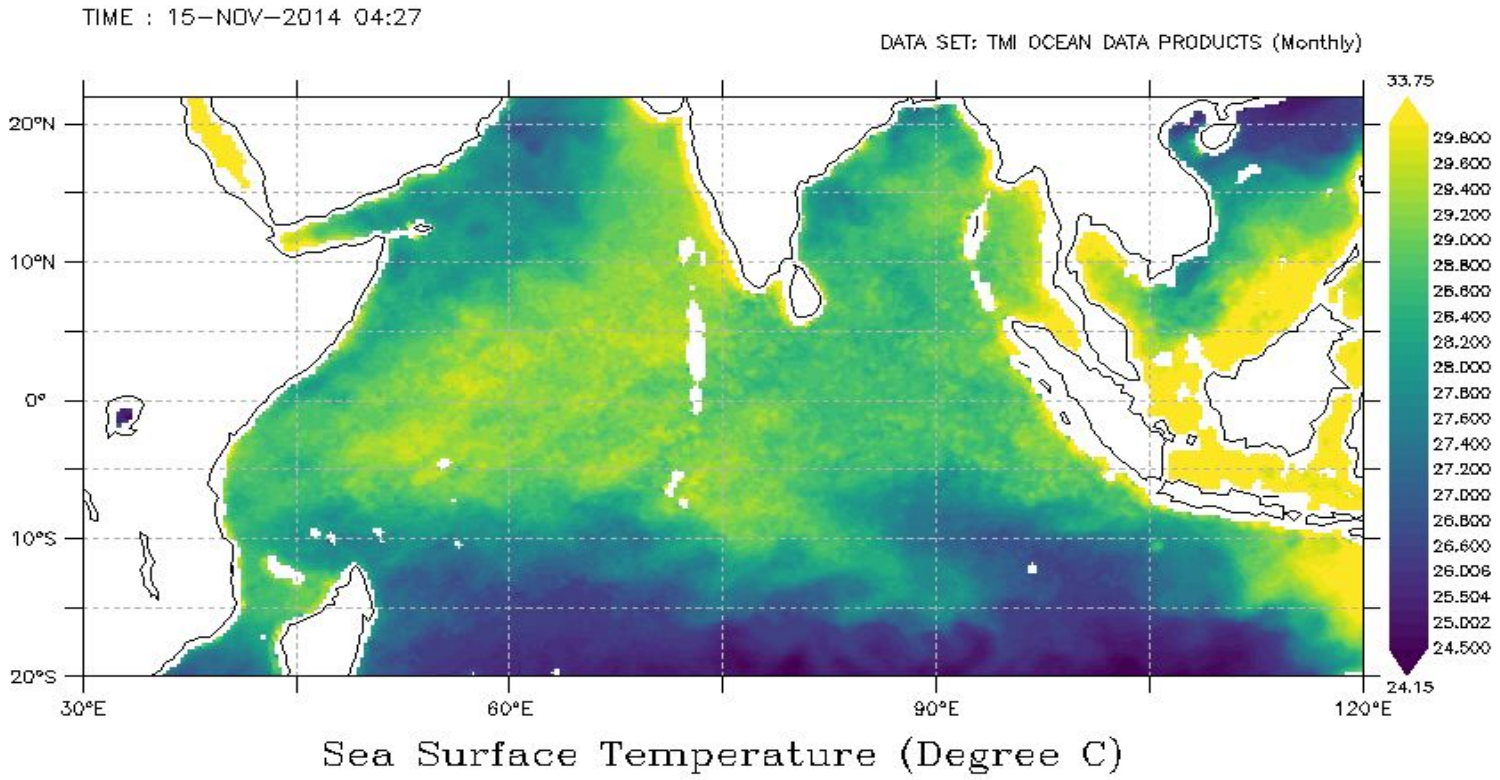




Play with Plot Options



Animation plot



Multiple plots in a frame: compare 2 > select requirement > update plot

Update Plots | Compare 2 | Annotations | Plot Options

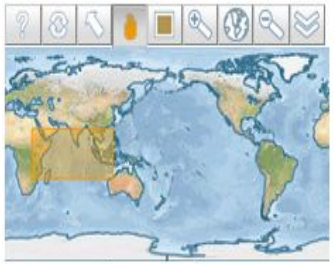
Print... | Link... | Difference Mode | Auto Colors

DATASET: TMI OCEAN DATA PRODUCTS (Monthly)
VARIABLE: Sea Surface Temperature (Degree C)
TIME : 16-MAY-2014 13:32
LAS 8./Ferret 7.6 NOAA/PMEL

Print | Sea Surface Temperature | Date/Time: 2014 | May

DATASET: TMI OCEAN DATA PRODUCTS (Monthly)
VARIABLE: Sea Surface Temperature (Degree C)
TIME : 15-DEC-2014 14:56
LAS 8./Ferret 7.6 NOAA/PMEL

Data Set | Print | Sea Surface Temperature | Date/Time: 2014 | Dec



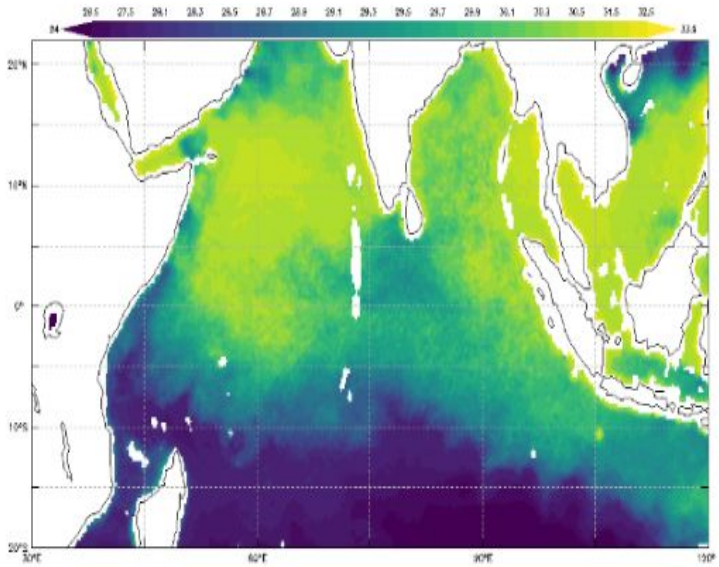
22 N | 30 E | 120 E | 20 S

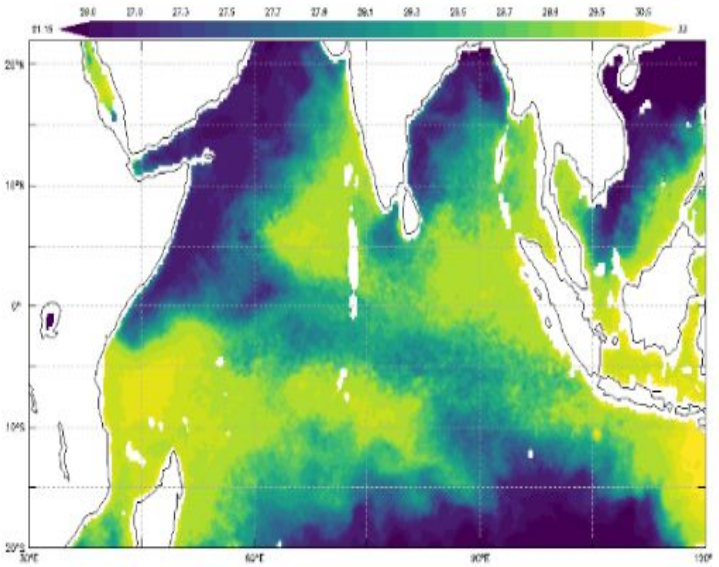
Compute: None
over: Area

Maps
- Latitude-Longitude

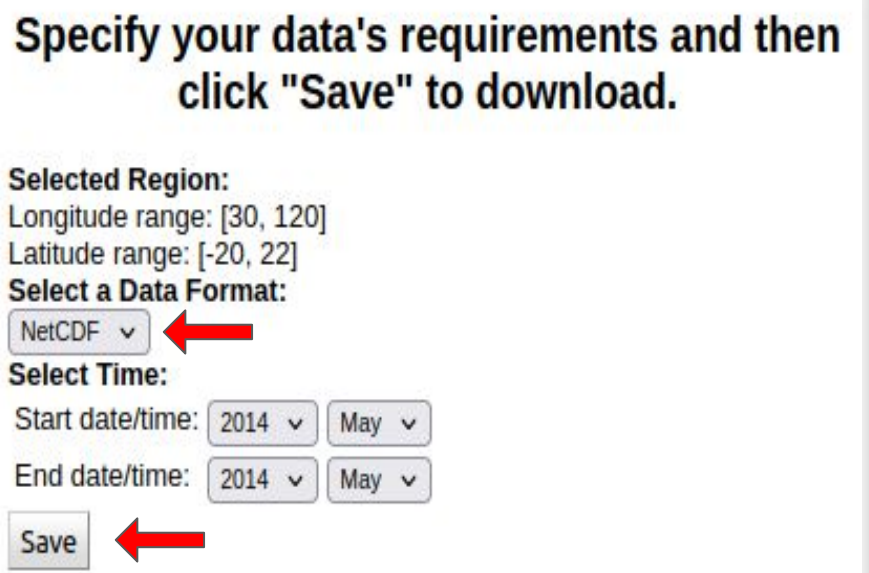
Line Plots
- Time
- Longitude
- Latitude

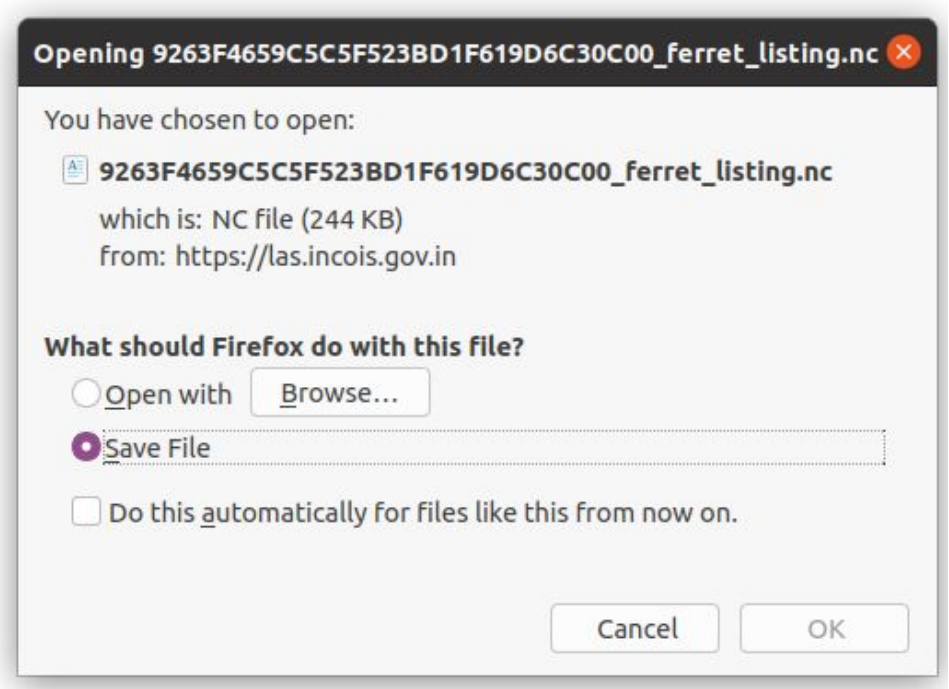
Hovmoller Plots





Save as > select data format > time > save

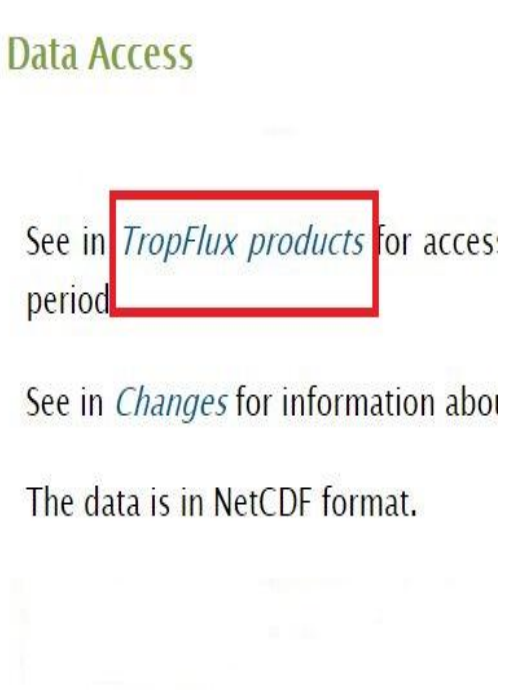




Output: ASCII, NetCDF, CSV, arcGrid

TropFlux

- Aims at providing daily, timely, accurate air-sea heat and momentum flux data for the entire Indian ocean region
- Data available since 1979
- TropFlux data is freely available for research and education purposes.



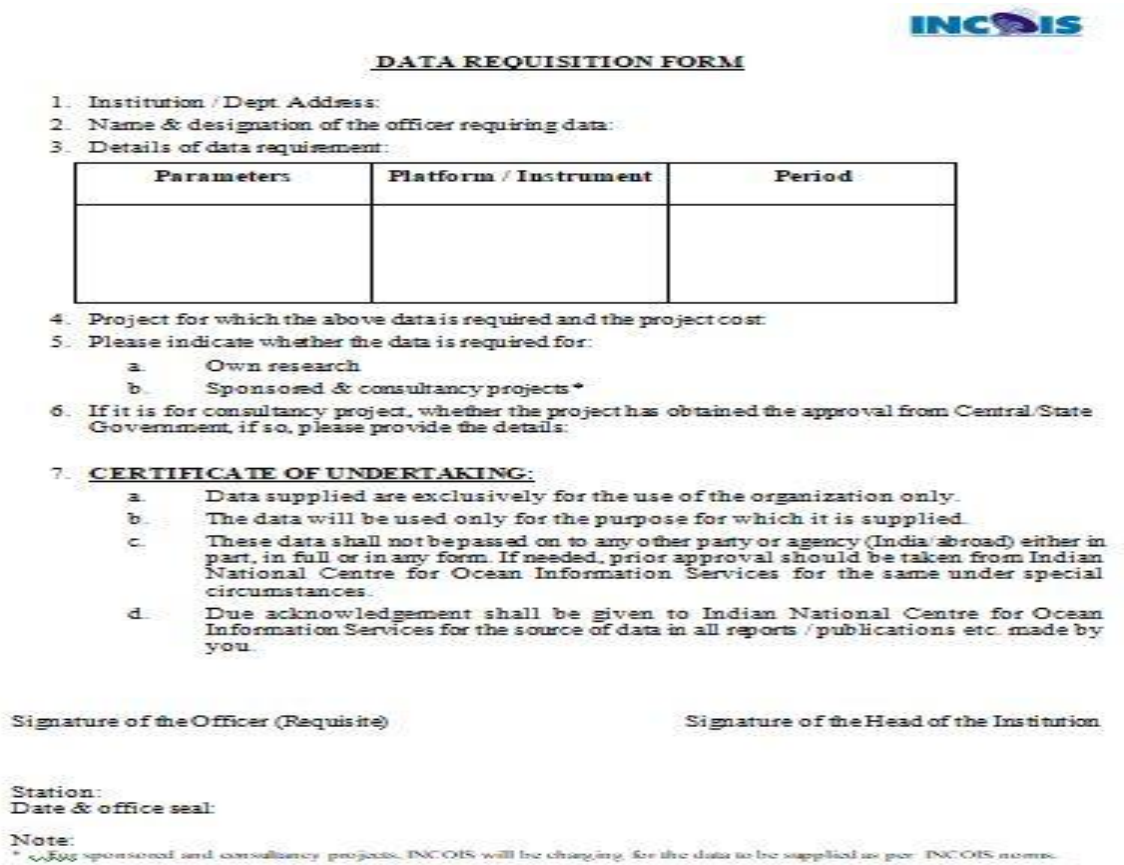
Note: To download TropFlux data, registration is required.

Data Dissemination

- Policy
  - Remote Sensing Data Policy (RSDP): data acquisition and distribution of remote sensing satellite data, from Indian and foreign satellites, for the civilian users

- Process:
  - Less volume data & training datasets : through email (online)
  - Large volume data: through hard drives, DVDs (offline)
  - Bulk of data: FTP
  - Geographic Information Systems (GIS): for acquiring, managing, analyzing, and presenting spatially related information

DATA REQUISITION FORM



INCOIS

DATA REQUISITION FORM

1. Institution / Dept. Address:
2. Name & designation of the officer requiring data:
3. Details of data requirement:

Parameters	Platform / Instrument	Period

4. Project for which the above data is required and the project cost:
5. Please indicate whether the data is required for:
   a. Own research
   b. Sponsored & consultancy projects *
6. If it is for consultancy project, whether the project has obtained the approval from Central/State Government, if so, please provide the details:

7. **CERTIFICATE OF UNDERTAKING:**
   a. Data supplied are exclusively for the use of the organization only.
   b. The data will be used only for the purpose for which it is supplied.
   c. These data shall not be passed on to any other party or agency (India/abroad) either in part, in full or in any form. If needed, prior approval should be taken from Indian National Centre for Ocean Information Services for the same under special circumstances.
   d. Due acknowledgement shall be given to Indian National Centre for Ocean Information Services for the source of data in all reports / publications etc. made by you.

Signature of the Officer (Requisite) Signature of the Head of the Institution

Station:
Date & office seal:

Note:
* [illegible] sponsored and consultancy projects, INCOIS will be charging for the data to be supplied as per INCOIS norms.

https://incois.gov.in/portal/datainfo/drform.jsp

THANK YOU!!