

Introduction to the Data Library [DL]

a tool to analyze and visualize data

I. Introduction

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The Data Library [DL] is...

... 3 things:

1. a web-based data repository
2. a tool to **analyze** and **visualize** data
3. a database to **download** from



IRI/LDEO Climate Data Library

The IRI Data Library is a powerful and freely accessible online data repository and analysis tool that allows a user to view, analyze, and download hundreds of terabytes of climate-related data through a standard web browser.

It is a powerful tool that offers the following capabilities at no cost to the user:

- access any number of datasets;
- create analyses of data ranging from simple averaging to more advanced EOF analyses using the Ingrid Data Analysis Language;
- monitor present climate conditions with maps and analyses in the [Maproom](#);
- create visual representations of data, including animations;
- download data in a variety of commonly-used [formats](#), including GIS-compatible formats.

Latest from our [What's New](#) blog

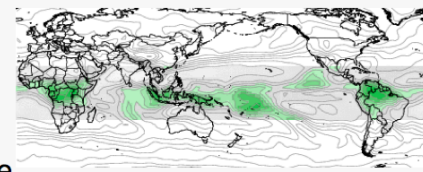
[Precipitation Flexible Seasonal Forecast](#)

The Flexible Seasonal Forecast for precipitation and temperature has new color scales. Check it out!

climate forecast temperature precipitation season
2016-02-08 15:21:53 GMT

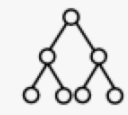
IRI Climate and Society Map Room

The climate and society maproom is a collection of maps and other figures that monitor climate and societal conditions at present and in the recent past. The maps and figures can be manipulated and are linked to the original data. Even if you are primarily interested in data rather than figures, this is a good place to see which datasets are particularly useful for monitoring current conditions.



Data by Source

Datasets organized by source, i.e. creator and/or provider.



Data By Category

Selected Datasets for particular topics

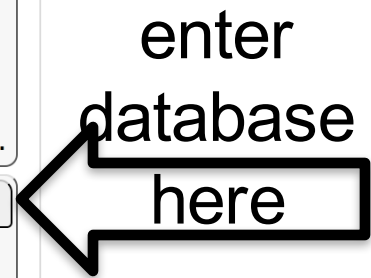
Dataset and Map Room Browser

Find datasets and maps organized by many characteristics and keywords



Navigating Through the IRI Data Library: A Tutorial

The goal of this tutorial is to introduce you to the structure of the Data Library and the many ways to navigate through it.



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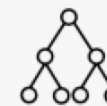
[climate](#) [forecast](#) [temperature](#) [precipitation](#) [season](#)
2016-02-08 15:21:53 GMT

functions
defined
here



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Data By Category

Selected Datasets for particular topics

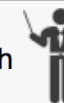
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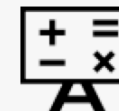
Statistical Techniques in the Data Library: A Tutorial

Statistical techniques are essential tools for analyzing large datasets; this statistics tutorial thus covers essential skills for many data library users.



Function Index

Index for functions that can be used to analyze data within the Data Library.



Help Resources

The Help Resources include basic and statistics tutorials, function documentation, and other resources to help you get the maximum utility out of the Data Library



Climate Data Library

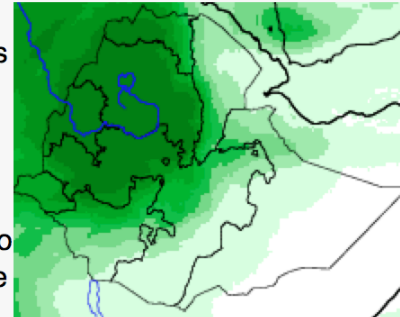
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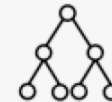
NMA Map Room

The climate and society maproom is a collection of maps and other figures that monitor climate and societal conditions at present and in the recent past. The maps and figures can be manipulated and are linked to the original data. Even if you are primarily interested in data rather than figures, this is a good place to see which datasets are particularly useful for monitoring current conditions.



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Function Index

Index for functions that can be used to analyze data



The Data Library [DL] is

1. a web-based data repository

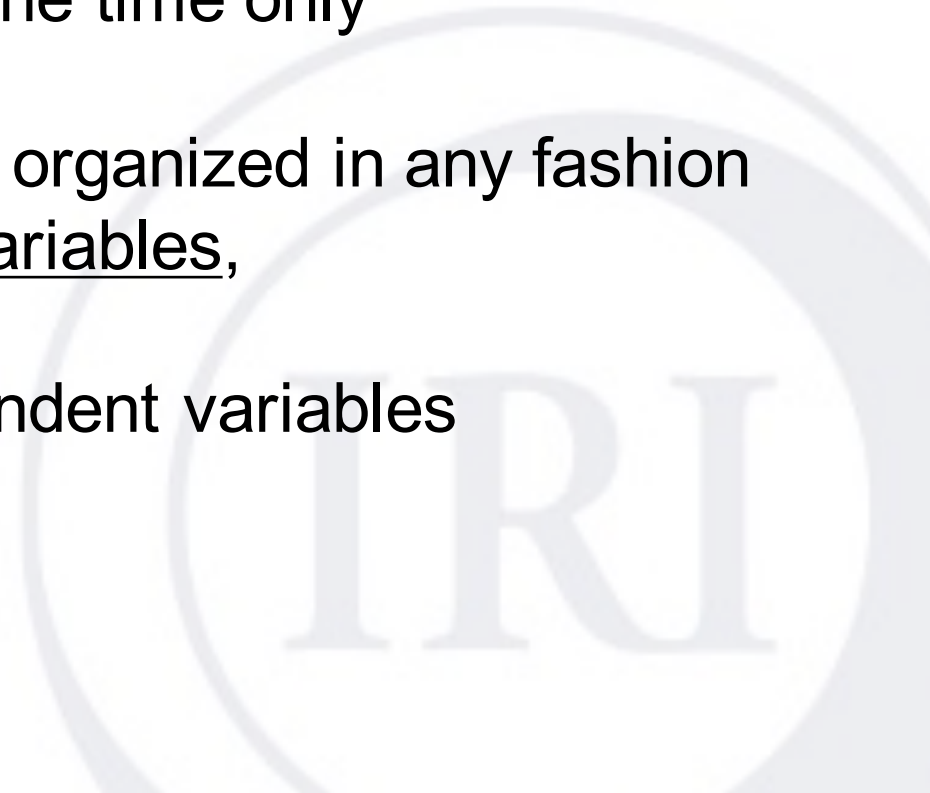
climate, environment, socio-economic...

Data is usually organized

in space: gridded, station, administrative boundary

in time: daily, monthly,... one time only

in general terms, data can be organized in any fashion as long as the independent variables, called “grids” in the DL, are defined to index the dependent variables



An example of a gridded variable in a dataset –

**Navigation with mouse clicks exposes the architecture in the dataset.
The URL keeps track of the operations.**

The screenshot shows a web browser window with the URL `SOURCES/.MaliMeteo/.ENACTS/.rainfall/.MON/.dekadly/.rfe_merged/`. The browser's address bar includes a search icon and navigation icons. Below the browser, a data library interface is visible. It features a 'Data Library' section with a flag icon, a text input field containing 'MaliMeteo ENACTS rainfall MON dekadly rfe_merged', and two coordinate input fields: 'X' with '12.39375W - 4.40625E' and 'Y' with '9.99375N - 25.21875N'. A date range input field shows '2214 31 Dec 1982 - 1344 31 Dec 2014'. A 'Language' dropdown menu is set to 'english'. Below this is a navigation bar with tabs: 'Description' (selected), 'Views', 'Data Filters', 'Data Selection', 'Data Files', 'Data Tables', and 'Expert Mode'. The main content area displays a breadcrumb trail: `SOURCES` → `MaliMeteo` → `ENACTS` → `rainfall` → `MON` → `dekadly` → `rfe_merged`. Red curved arrows point from `SOURCES` to `MaliMeteo`, `MaliMeteo` to `ENACTS`, and `ENACTS` to `rainfall`. Below the breadcrumb is the title **MaliMeteo ENACTS rainfall MON dekadly rfe_merged: Merged Station-Satellite Rainfall data** and a description: 'ENACTS rainfall MON dekadly Merged Station-Satellite Rainfall from MaliMeteo: Agence Nationale de la Météorologie du Mali.' Under the heading **Independent Variables (Grids)**, there are three entries: 'Time' with a grid of 1152 points, 'Longitude (longitude)' with a grid of 448 points, and 'Latitude (latitude)' with a grid of 406 points. An **Other Info** section shows 'CE' with a value of 300. The page is served from IP address 197.155.140.164.

An example of a dataset of station measurements –
from NOAA/NCDC/Global Historical Climate Network

<http://iridl.ldeo.columbia.edu/SOURCES/.NOAA/.NCDC/.GHCN/.v2beta/>

iridl.ldeo.columbia.edu/SOURCES/.NOAA/.NCDC/.GHCN/.v2beta/

NOAA NCDC GHCN beta version 2 (prcp) using no labels

Language: english

Description Searches Views Data Selection Data Files Data Tables Expert Mode

served from IRI/LDEO Climate Data Library

SOURCES NOAA NCDC GHCN v2beta

NOAA NCDC GHCN beta version 2 (prcp)

NOAA NCDC GHCN beta version 2 (prcp): Monthly weather station precipitation data from the Global Historical Climate Network.

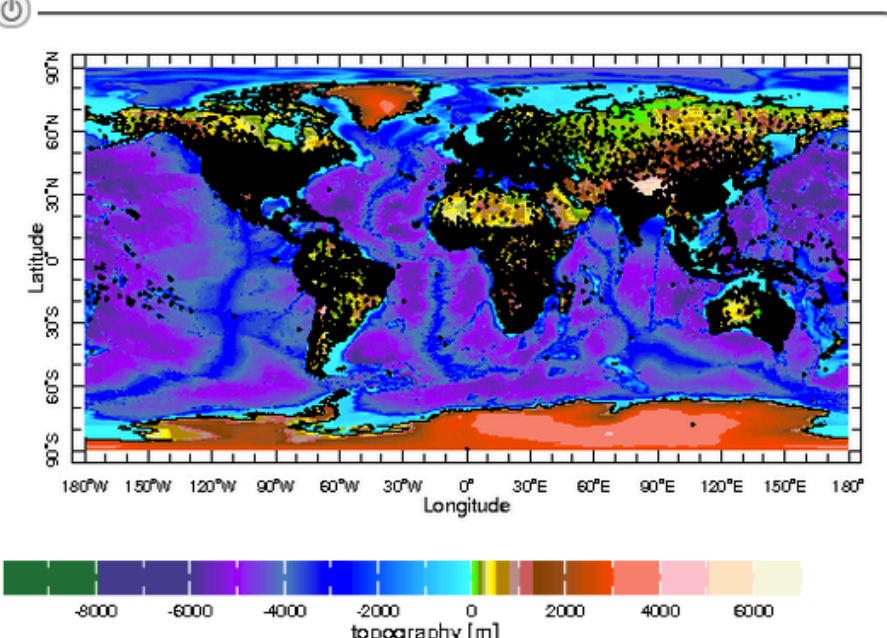
Documents

[outline](#) an outline showing all sub-datasets and variables contained in this dataset

[agreement](#)

Datasets and Variables

elev	NOAA NCDC GHCN v2beta elev[IWMO]
label	NOAA NCDC GHCN v2beta label[IWMO]
latitude	NOAA NCDC GHCN v2beta lat[IWMO]
location	NOAA NCDC GHCN v2beta location[IWMO]
longitude	NOAA NCDC GHCN v2beta lon[IWMO]



World map showing topography (elevation) in meters. The map uses a color scale from -8000 (dark blue) to 6000 (dark red). The x-axis is Longitude (180°W to 180°E) and the y-axis is Latitude (90°S to 90°N).

An example of an “exotic” dataset –
a WFP household survey


<http://iridl.ldeo.columbia.edu/SOURCES/.UN/.WFP/.VAM/.CFSVA/.Senegal/.y2011/>

The original database structure is preserved.

The screenshot shows a web browser window with the URL `iridl.ldeo.columbia.edu/SOURCES/.UN/.WFP/.VAM/.CFSVA/.Senegal/.y2011/`. The browser's search bar contains the text "comet ncar". The page header includes the IRI logo and the text "Data Library" and "UN WFP VAM CFSVA Senegal y2011". A language dropdown menu is set to "english". Below the header, there are two tabs: "Description" (selected) and "Expert Mode". A breadcrumb navigation path is shown as a series of green ovals: SOURCES - UN - WFP - VAM - CFSVA - Senegal - y2011. The main content area displays the title "UN WFP VAM CFSVA Senegal y2011" and a description: "Senegal y2011 from UN WFP VAM CFSVA: Comprehensive Food Security and Vulnerability Analysis." Under the "Documents" section, there is a link for "overview" with the text "an outline showing sub-datasets of this dataset". Under the "Datasets and Variables" section, there are three entries: "Communautaire" with a list of sections, "Computed" with a truncated description, and "Features" with a list of variables including "D_Ident_DR", "Pondérations_ajustées", "Comm_Rur_S0_07", "S0_14", "ARRONDIS S0_05B", "D_Q005", "S0_0B2", "FID_AGVSAN", "VILL_ID_1", "S0_0E1", "ADMI1", "VillageCode", "S0_0B", "Ident_DR", "CA_CR", "S0_15", and "S00A_bis".

An example of a variable in an “exotic” dataset –
a WFP household survey

<http://iridl.Ideo.columbia.edu/SOURCES/.UN/.WFP/.VAM/.CFSVA/.Senegal/.y2011/>



iridl.Ideo.columbia.edu/SOURCES/.UN/.WFP/.VAM/.CFSVA/.Senegal/.y2011/.Section4/.Production_agric

UN WFP VAM CFSVA Senegal y2011 Section4 Production_agricole Arachide Arachide_Produit

UN WFP VAM CFSVA Senegal y2011 Section4 Production_agricole Arachide Arachide_Produit: Quantité de Arachide produit data

Senegal y2011 Section4 Production_agricole Arachide Quantité de Arachide produit from UN WFP VAM CFSVA: Comprehensive Food Security and Vulnerability Analysis.

Independent Variables (Grids)

households
grid: /VNID (unitless) ordered (1.0) to (10333.0) by 1.0 N= 10333 pts :grid

Other Info

bufferwordsize
4
datatype
realarraytype
missing_value
-999.0
units
unitless
history
Questionnaire data for WFP VAM Senegal 2011 CFSVA geolocalized

Last updated: Fri, 18 Sep 2015 18:39:07 GMT

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Manipulations on a variable in a dataset – *Visualization, analysis, download*

SOURCES/.MaliMeteo/.ENACTS/.rainfall/.MON/.dekadly/.rfe_merged/

Data Library
MaliMeteo ENACTS rainfall MON dekadly rfe_merged
12.39375W - 4.40625E 9.99375N - 25.21875N
2214 31 Dec 1982 - 1344 31 Dec 2014

Views Data Filters Data Selection Data Files Data Tables Expert Mode

SOURCES MaliMeteo ENACTS rainfall MON dekadly rfe_merged

MaliMeteo ENACTS rainfall MON dekadly rfe_merged: Merged Station-Satellite Rainfall data
ENACTS rainfall MON dekadly Merged Station-Satellite Rainfall from MaliMeteo: Agence Nationale de la Météorologie du Mali.

Independent Variables (Grids)

Time
grid: /T (days since 1960-01-01) ordered [(1-10 Jan 1983) (11-20 Jan 1983) (21-31 Jan 1983) ... (21-31 Dec 2014)] N= 1152 pts :grid

Longitude (longitude)
grid: /X (degree_east) ordered (12.375W) to (4.3875E) by 0.0375 N= 448 pts :grid

Latitude (latitude)
grid: /Y (degree_north) ordered (10.0125N) to (25.2N) by 0.0375 N= 406 pts :grid

Other Info

CE
300

visualization
analysis
download

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Language: english

2214 31 Dec 1982 - 1344 31 Dec 2014

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served from 197.155.140.164

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What is the relationship between DL and Maprooms?





NMA NATIONAL METEOROLOGY AGENCY

- Home
- Daily Weather
- Forecasts
- Maproom
- Satellite
- Bulletins
- Contact

Search...

You Are Here: Home

National Meteorology Agency

- About NMA
- Data Service
- Climate
- Short Range Forecast
- Medium Range Forecast
- Long Range Forecast
- Agromet Bulletins
- Health Bulletins
- Hydromet Bulletins
- Satellite Images
- Climate Analyses & Application (Maproom)
- Research and Training
- Aviation Meteorology
- News Media
- Frequently Asked Questions



Location: Head Office | Photo Courtesy by NMA on October 06, 2001 02:00:00 | [Archive](#)

[Subscribe for Bulletins](#)

Weather Report

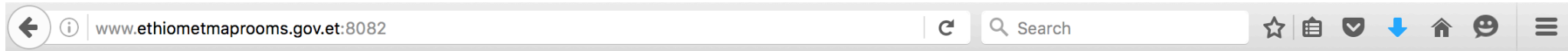
For: May 02, 2016

Addis Ababa (Bole AP)

Addis Ababa (Bole AP)



Min. Temp.: 14.8°C
Max. Temp.: 23.8°C



NMA
Climate Data Library

Climate Data Library

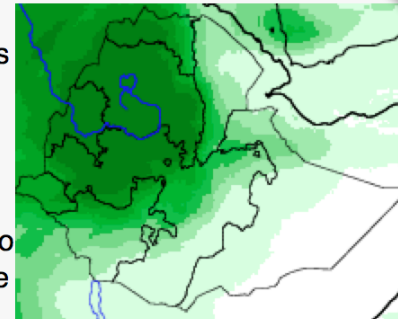
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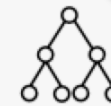
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Maproom

Data by Source

Datasets organized by source, i.e. creator and/or provider.



Data Library

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Statistical Techniques in the Data Library: A

The “Maprooms”

are predefined analyses
scripted using the data and functions in the DL

The screenshot shows a web browser window with the URL `maproom/index.html`. The page features a navigation bar with the following elements:

- Meteo Mali logo (Mali flag)
- Climate Data Library button
- Data Library Maproom button
- Language dropdown menu set to "english"

The main content area is titled "Meteo Mali Map Room" and includes a descriptive paragraph:

The maproom is a collection of maps and other figures that monitor climate and societal conditions at present and in the recent past. The maps and figures can be manipulated and are linked to the original data. Even if you are primarily interested in data rather than figures, this is a good place to see which datasets are particularly useful for monitoring current conditions.

Below the text are two featured maproom cards:

- Climate**: "Historical, current and forecast climate conditions around the country." Includes a map of Mali with a blue and green overlay.
- Malaria Historical Analysis**: "Climate variables may effect malaria transmission in certain regions. These products aid to determine the historical risk for malaria due to climatic factors." Includes a map of Mali with a blue and green overlay.

At the bottom, there is a "Share" section with social media icons (Twitter, Facebook, etc.) and a "Recommend this on Google" button. A Mali flag is visible in the bottom right corner.



Maproom
Climate

Climate Analysis

Dekad Climate Analysis

Region

Mali

Variable

rainfall

Language

english

Spatially Average Over

gridpoint

Yearly Seasonal Anomalies

Jan

Mar

1983

to

2014

Description

Dataset Documentation

Instructions

Contact Us

How to use this interactive map

- Zoom Out** Restores default view by removing any zoom requests. Note that the back button undoes the most recent zoom on modern browsers.
- More Information** Opens a page in the source data library which gives additional detail and options for the current image.
- Independent Variables** Controls the setting of the independent variables such as time or height. Only appears when there are choices to be made.
- Layers** Switches layers on and off in images that are displaying multiple layers of information. Only appears when there are choices to be made.
- Share** Allows sharing the current image with variable online tools and social media sites. Map-oriented tools are not given as options if the image is not a map.
- Download** Allows downloading the current image in various formats and protocols. The level of information varies depending on the format: only KML, WMS and PDF include links back to this page.
- Multiple image sections** Shows the currently-selected image with a black border when either sharing or downloading images. Clicking on another image will change the currently selected image.
- Control Lock** When this button is fully engaged, the controls remain visible; otherwise the controls appear and this button partially engages automatically when the image is active.

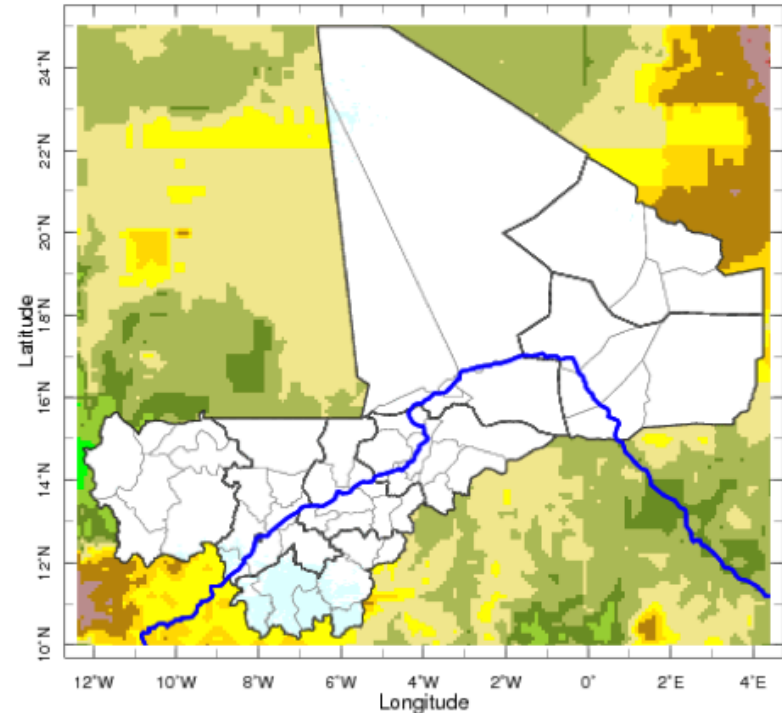


Time

1-10 Jan

1-10 Jan

21-31 Dec



1 10 Jan

0 20 40 60 80 100 120 140 160 180 200
Rainfall Dekad Climatology 1983 2012 [mm]

-8000 -6000 -4000 -2000 0 2000 4000 6000
topography [m]

Language: english

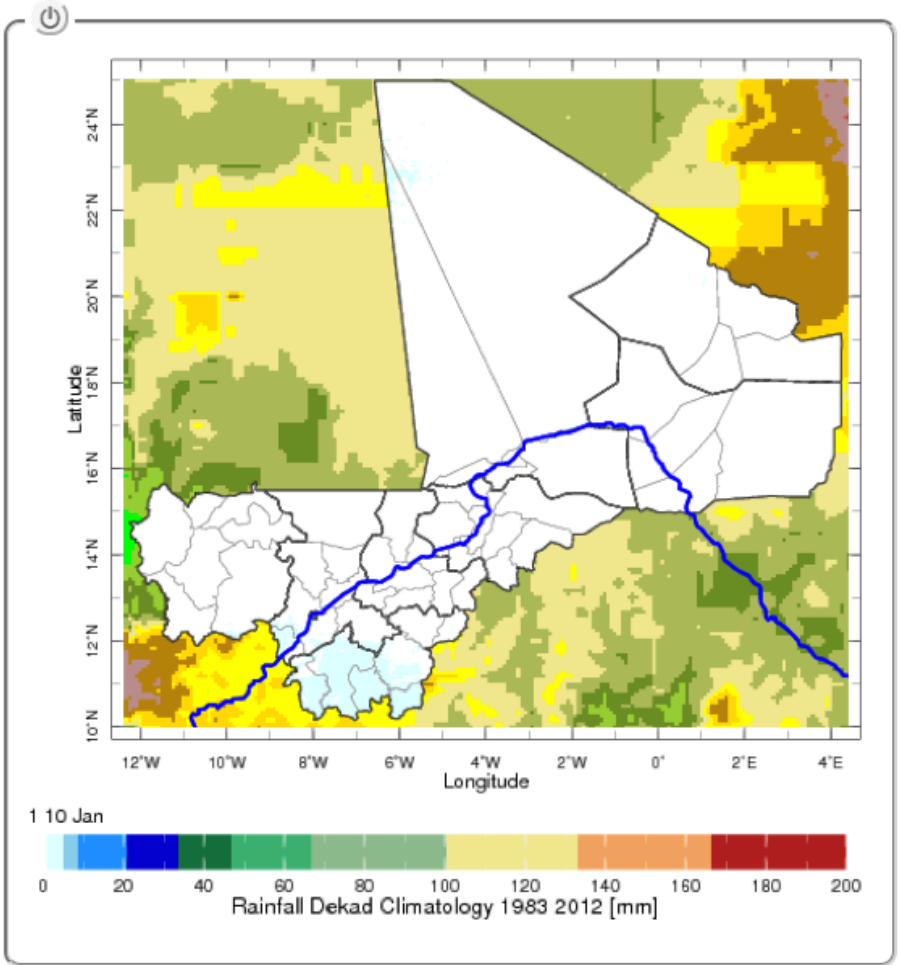
Data Library

[MaliMeteo ENACTS rainfall CLM dekadly climatologies rfe_merged], [WORLDBATH bath], [MaliMeteo ENACTS rainfall CLM dekadly climatologies rfe_merged], [Features Political Mali Provinces the_geom], [Features Political Mali Districts the_geom]

var

.rfe_merged

```
SOURCES .MaliMeteo .ENACTS
(.rfe_merged)
/var parameter
(.rfe_merged) eq
{ .rainfall .CLM .dekadly .climatologies }
{.temperature .res0375 .ADJ .dekadly .climatologies
}ifelse
/var get_parameter
dup
(.rfe_merged) eq
{interp DATA 0 200 RANGE} {interp} ifelse
/name /clim_var def
SOURCES .WORLDBATH .bath
X -13 5 RANGE
Y 10 25 RANGE
l index
SOURCES .Features .Political .Mali .Provinces
.the_geom
SOURCES .Features .Political .Mali .Districts
.the_geom
X Y fig- colors colors || colors thinnish stroke
verythin grey stroke blue medium rivers_gaz -fig
/antialias true pdef
```



- MaliMeteo ENACTS rainfall CLM dekadly climatologies rfe_merged[X Y I T]
- WORLDBATH bath[X I Y]
- MaliMeteo ENACTS rainfall CLM dekadly climatologies rfe_merged[X Y I T]
- Features Political Mali Provinces the_geom[l gid]
- Features Political Mali Districts the_geom[l gid]
- grid: /X (degree_east) ordered (12.375W) to (4.3875E) by 0.0375 N= 448 pts :grid
- grid: /Y (degree_north) ordered (10.0125N) to (25.2N) by 0.0375 N= 406 pts :grid
- fig: colors colors || colors thinnish stroke verythin grey stroke blue medium rivers_gaz :fig

expert mode!!!

iridl.ideo.columbia.edu/expert/SOURCES/.NOAA/.NCDC/.GHCN/.v2beta/IWMO/61036000/61043000/6

Search

Language: english

IRI

Data Library

svd { anomaly { NOAA NCDC GHCN v2beta prcp } / 30. }

Description Views Data Selection Data Files Data Tables **Expert Mode**

IWMO

- NOAA NCDC GHCN v2beta[Name prcp lon elev lon elev label lat]
- NOAA NCDC GHCN v2beta lon[IWMO I]
- NOAA NCDC GHCN v2beta lat[IWMO I]
- svd { anomaly { NOAA NCDC GHCN v2beta prcp } / 30. }[evaln Ss Ts vartot sv]

```
expert
SOURCES .NOAA .NCDC .GHCN .v2beta
IWMO 61036000 61043000 61049000 61052000 61080000 61090000 61099000 61223000 61226000 61250000 61257000 61265000 61277000 61291000 61293000
61296000 61297000 61442000 61600000 61630000 61641000 61687000 61695000 62641000 62721000 62730000 62752000 62760000 62762000 62771000
62772000 63450000 63619000 64400000 64700000 64860000 65306000 65319000 65330000 65335000 65344000 65361000 65376000 65387000 65501000
65502000 65503000 65507000 65510000 65516000 65522000 65548000 65555000 67475000 67633000 67663000 67743000 VALUES
lon
DATA -25 50 RANGE
lat
DATA 5 20 RANGE
2 index .prcp
T (Jul 1930) (Sep 2000) RANGE
T 3 boxAverage
T 12 STEP
dup
[T]average
sub
30 div
[IWMO][T]svd
```

OK reset

The Data Library [DL] is

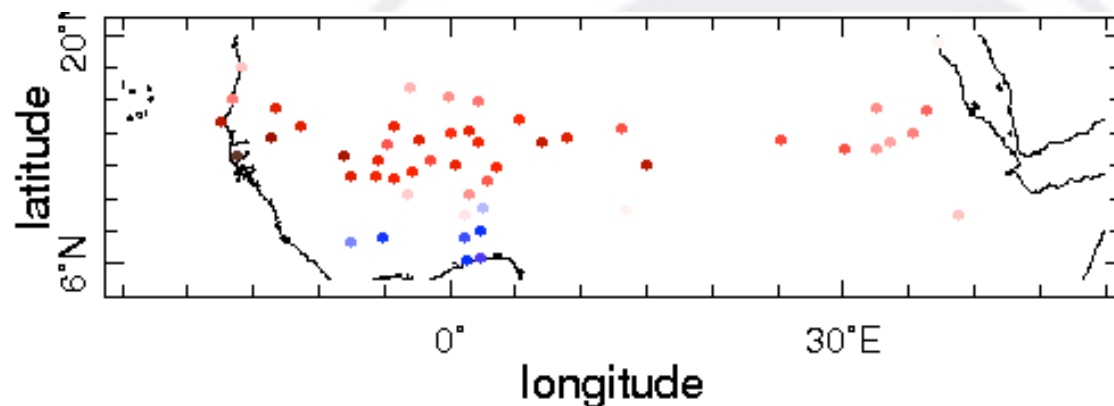
2. a tool to analyze and visualize data

```
SOURCES .NOAA .NCDC .GHCN .v2beta
IWMO 61036000 61043000 61049000 61052000 61080000 61090000
61099000 61223000 61226000 61250000 61257000 61265000 61277000
61291000 61293000 61296000 61297000 61442000 61600000 61630000
61641000 61687000 61695000 62641000 62721000 62730000 62752000
62760000 62762000 62771000 62772000 63450000 63619000 64400000
64700000 64860000 65306000 65319000 65330000 65335000 65344000
65361000 65376000 65387000 65501000 65502000 65503000 65507000
65510000 65516000 65522000 65548000 65555000 67475000 67633000
67663000 67743000 VALUES
```

"expert mode"
code

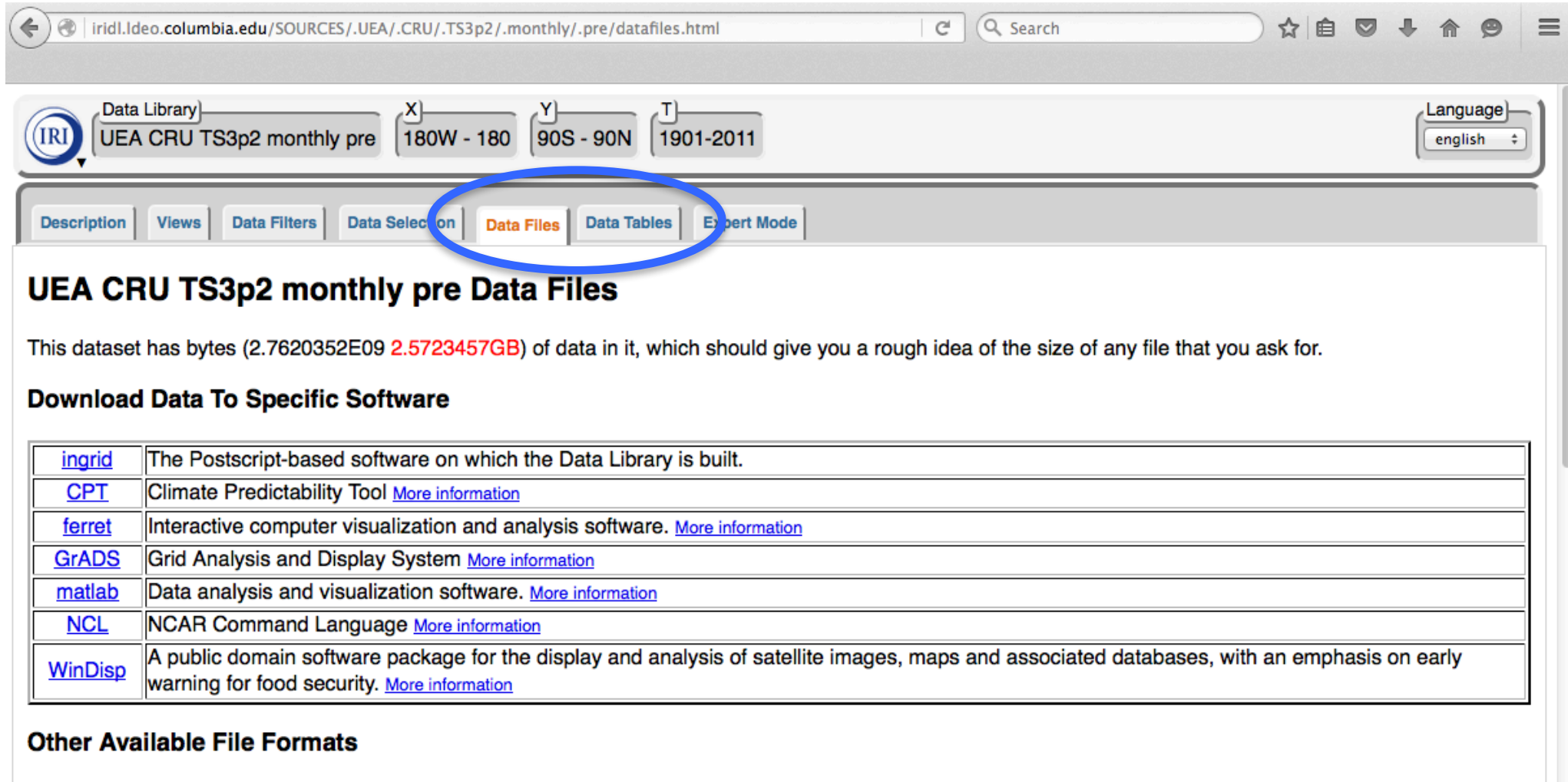


```
lon
DATA -25 50 RANGE
lat
DATA 5 20 RANGE
2 index .prcp
T (Jul 1930) (Sep 2000) RANGE
T 3 boxAverage
T 12 STEP
dup
```



The Data Library [DL] is

3. a database to **download** from in different formats



The screenshot shows a web browser window with the URL `iridl.ideo.columbia.edu/SOURCES/.UEA/.CRU/.TS3p2/.monthly/.pre/datafiles.html`. The page displays the IRI logo and a search bar. Below the search bar, there are input fields for 'Data Library' (UEA CRU TS3p2 monthly pre), 'X' (180W - 180), 'Y' (90S - 90N), and 'T' (1901-2011). A 'Language' dropdown menu is set to 'english'. A navigation bar contains several tabs: 'Description', 'Views', 'Data Filters', 'Data Selection', 'Data Files' (highlighted with a blue circle), 'Data Tables', and 'Expert Mode'. The main content area is titled 'UEA CRU TS3p2 monthly pre Data Files' and includes a text block stating: 'This dataset has bytes (2.7620352E09 2.5723457GB) of data in it, which should give you a rough idea of the size of any file that you ask for.' Below this is a section titled 'Download Data To Specific Software' with a table listing various software options.

Software	Description
ingrid	The Postscript-based software on which the Data Library is built.
CPT	Climate Predictability Tool More information
ferret	Interactive computer visualization and analysis software. More information
GrADS	Grid Analysis and Display System More information
matlab	Data analysis and visualization software. More information
NCL	NCAR Command Language More information
WinDisp	A public domain software package for the display and analysis of satellite images, maps and associated databases, with an emphasis on early warning for food security. More information

Other Available File Formats

In other words...



Data in the IRI DL

can be displayed, and the figures produced can be downloaded in a variety of formats

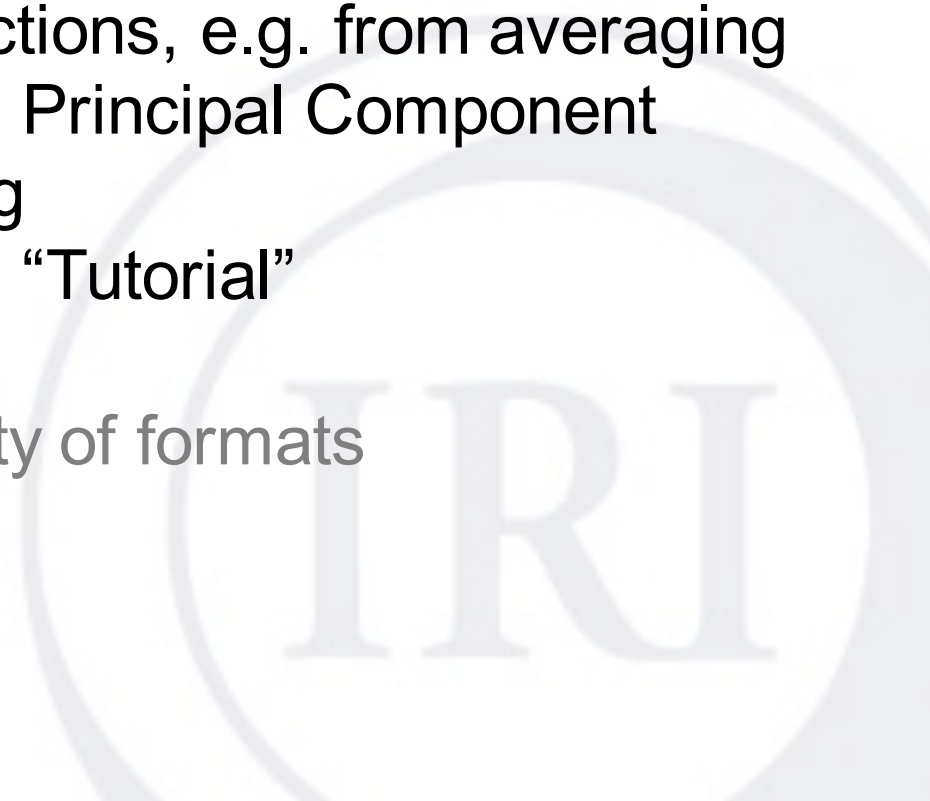
>> *pdf, gif, jpg, tiff...*

can be manipulated using from most basic to more advanced statistical functions, e.g. from averaging in space or time to performing Principal Component Analysis or k-means clustering

>> “Function Documentation”, “Tutorial”

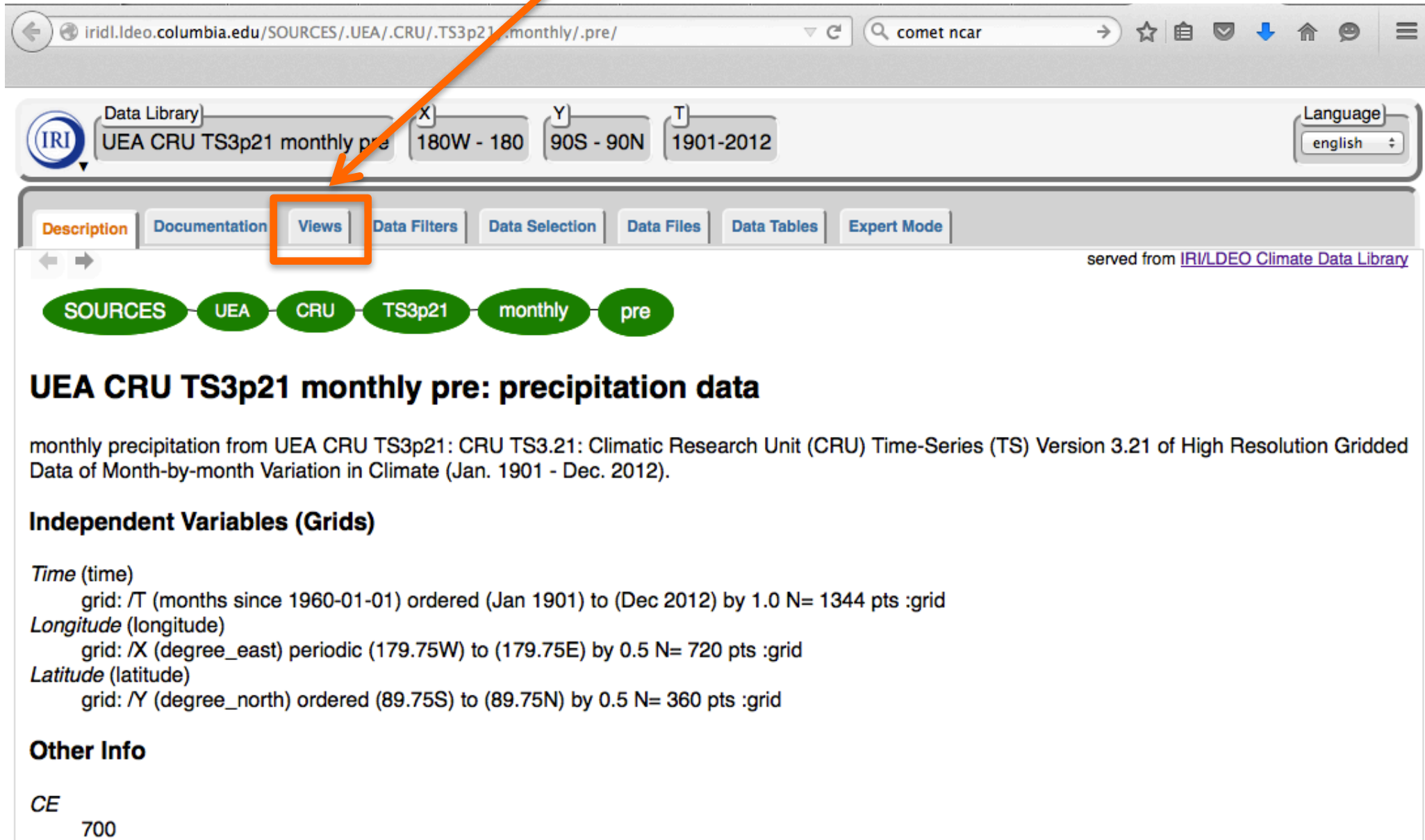
can be downloaded in a variety of formats

>> “Data Files”, “Tables”



How to display a variable

click on the “Views” tab



The screenshot shows a web browser window with the URL `iridl.ldeo.columbia.edu/SOURCES/.UEA/.CRU/.TS3p21/monthly/.pre/`. The page header includes the IRI logo, the variable name `UEA CRU TS3p21 monthly pre`, and geographic coordinates `180W - 180`, `90S - 90N`, and `1901-2012`. A navigation bar contains tabs for `Description`, `Documentation`, `Views` (highlighted with an orange box and an arrow), `Data Filters`, `Data Selection`, `Data Files`, `Data Tables`, and `Expert Mode`. Below the navigation bar is a breadcrumb trail: `SOURCES` - `UEA` - `CRU` - `TS3p21` - `monthly` - `pre`. The main content area displays the title **UEA CRU TS3p21 monthly pre: precipitation data** and a description: `monthly precipitation from UEA CRU TS3p21: CRU TS3.21: Climatic Research Unit (CRU) Time-Series (TS) Version 3.21 of High Resolution Gridded Data of Month-by-month Variation in Climate (Jan. 1901 - Dec. 2012).` Under the heading **Independent Variables (Grids)**, there are three entries: `Time (time)` with grid `/T (months since 1960-01-01) ordered (Jan 1901) to (Dec 2012) by 1.0 N= 1344 pts :grid`; `Longitude (longitude)` with grid `/X (degree_east) periodic (179.75W) to (179.75E) by 0.5 N= 720 pts :grid`; and `Latitude (latitude)` with grid `/Y (degree_north) ordered (89.75S) to (89.75N) by 0.5 N= 360 pts :grid`. At the bottom, under **Other Info**, the code `CE` and the value `700` are shown.

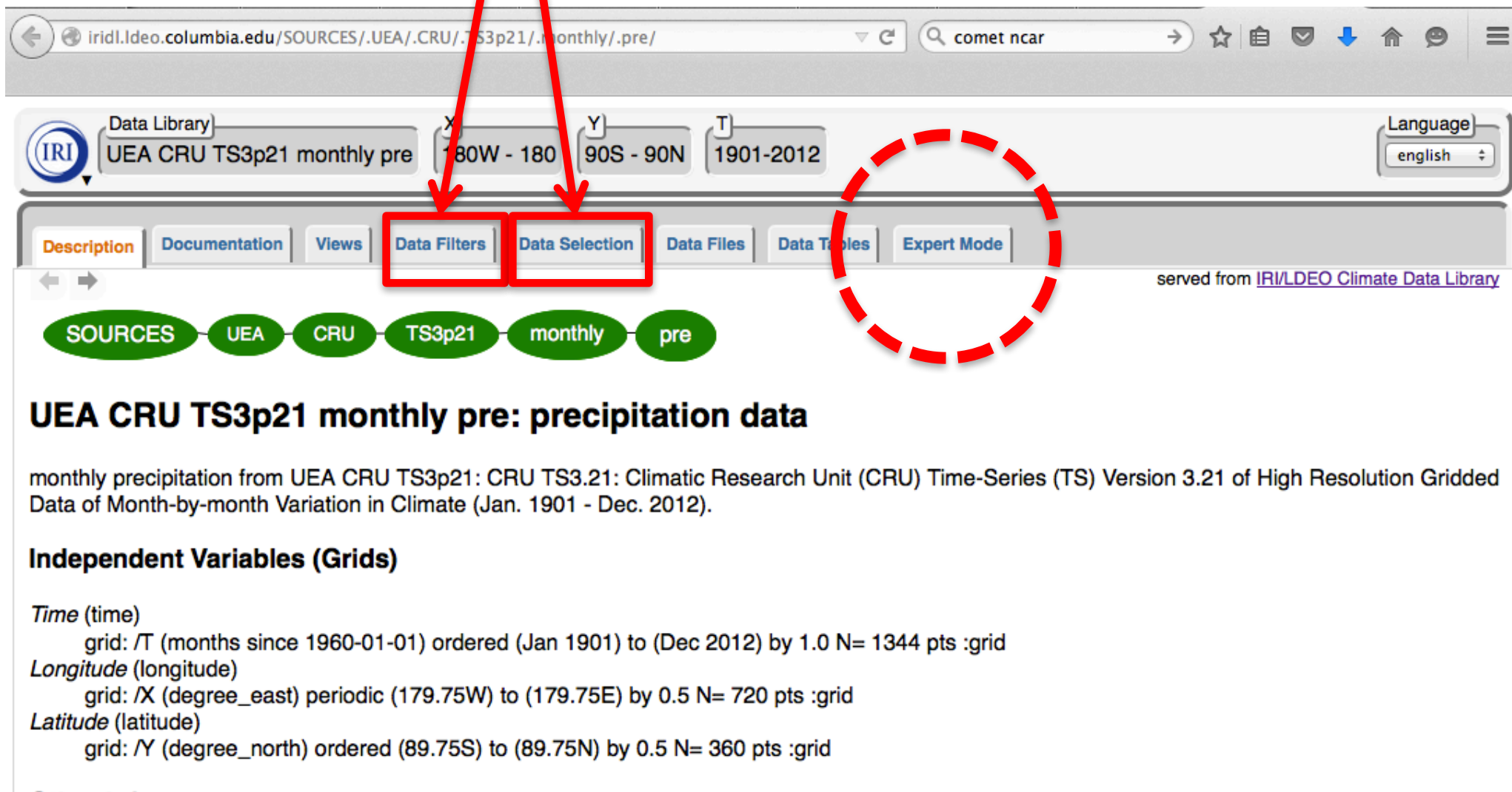
How to manipulate a dataset

make a selection, on “grids”

>> “Data Selection”

calculate a derived quantity

>> “Filters” [and Function documentation]



iridl.ideo.columbia.edu/SOURCES/.UEA/.CRU/.TS3p21/.monthly/.pre/ comet ncar

IRI Data Library UEA CRU TS3p21 monthly pre X 180W - 180 Y 90S - 90N T 1901-2012 Language english

Description Documentation Views **Data Filters** **Data Selection** Data Files Data Tables Expert Mode

SOURCES UEA CRU TS3p21 monthly pre

UEA CRU TS3p21 monthly pre: precipitation data

monthly precipitation from UEA CRU TS3p21: CRU TS3.21: Climatic Research Unit (CRU) Time-Series (TS) Version 3.21 of High Resolution Gridded Data of Month-by-month Variation in Climate (Jan. 1901 - Dec. 2012).

Independent Variables (Grids)

Time (time)
grid: /T (months since 1960-01-01) ordered (Jan 1901) to (Dec 2012) by 1.0 N= 1344 pts :grid

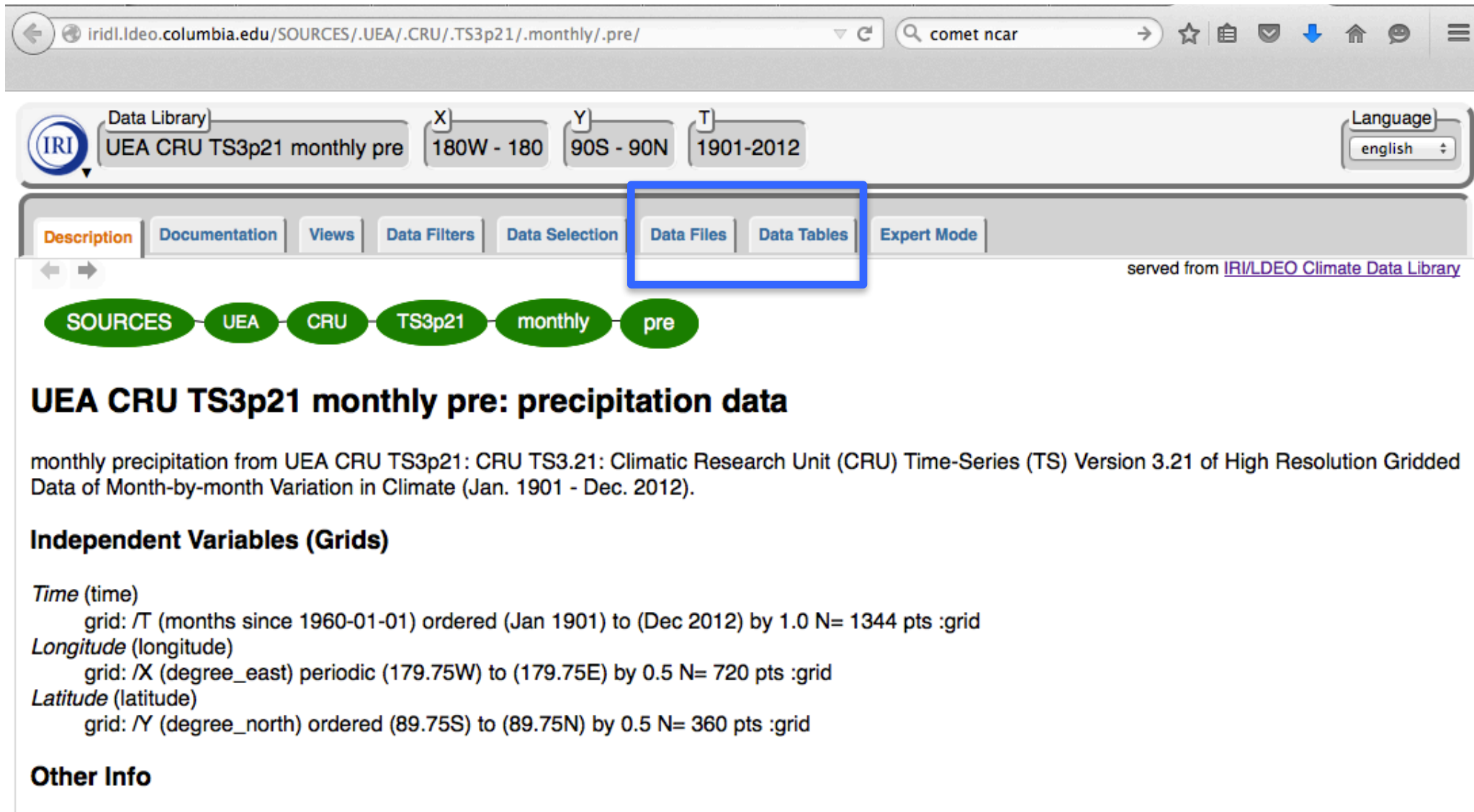
Longitude (longitude)
grid: /X (degree_east) periodic (179.75W) to (179.75E) by 0.5 N= 720 pts :grid

Latitude (latitude)
grid: /Y (degree_north) ordered (89.75S) to (89.75N) by 0.5 N= 360 pts :grid

How to [download](#)

>> Data Files

>> Tables



The screenshot shows a web browser window with the URL `iridl.ldeo.columbia.edu/SOURCES/.UEA/.CRU/.TS3p21/.monthly/.pre/`. The page header includes the IRI logo, the data path `UEA CRU TS3p21 monthly pre`, and filters for longitude (`180W - 180`), latitude (`90S - 90N`), and time (`1901-2012`). A navigation bar contains tabs for `Description`, `Documentation`, `Views`, `Data Filters`, `Data Selection`, `Data Files` (highlighted with a blue box), `Data Tables`, and `Expert Mode`. Below the navigation bar is a breadcrumb trail: `SOURCES` - `UEA` - `CRU` - `TS3p21` - `monthly` - `pre`. The main content area features the title **UEA CRU TS3p21 monthly pre: precipitation data** and a description: `monthly precipitation from UEA CRU TS3p21: CRU TS3.21: Climatic Research Unit (CRU) Time-Series (TS) Version 3.21 of High Resolution Gridded Data of Month-by-month Variation in Climate (Jan. 1901 - Dec. 2012).` Under the heading **Independent Variables (Grids)**, there are three sections: `Time (time)` with grid details `grid: /T (months since 1960-01-01) ordered (Jan 1901) to (Dec 2012) by 1.0 N= 1344 pts :grid`; `Longitude (longitude)` with grid details `grid: /X (degree_east) periodic (179.75W) to (179.75E) by 0.5 N= 720 pts :grid`; and `Latitude (latitude)` with grid details `grid: /Y (degree_north) ordered (89.75S) to (89.75N) by 0.5 N= 360 pts :grid`. The page also includes an **Other Info** section.

How to download

>> read into another software/tool/scripting language
[Matlab, IDL, NCL, R...] through OpenDAP

iridl.ideo.columbia.edu/SOURCES/.UEA/.CRU/.TS3p21/.monthly/.pre/datafiles.html

comet ncar

Language: english

UEA CRU TS3p21 monthly pre

X: 180W - 180 Y: 90S - 90N T: 1901-2012

Description Documentation Views Data Filters Data Selection **Data Files** Data Tables Expert Mode

UEA CRU TS3p21 monthly pre Data Files

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Other Available File Formats

How to [download](#)

>> download to local computer

Other Available File Formats

Full Information Formats	
These files contain all of the available metadata.	
OPeNDAP	A system which downloads data directly to software, such as matlab, Ferret, GrADS, etc. Specific instructions are available in the table above. Note: OPeNDAP was formerly known as DODS (Distributed Oceanographic Data System). More Information
netCDF (network Common Data Form)	A commonly supported self-describing data format. More Information
Partial Information Formats	
These files contain only some of the available metadata.	
Columnar Table	A table with separate columns of numbers for each independent variable (i.e., grids) and for the data. This is an inefficient format, so you would have gotten a HUGE file for dataset of this size. This file will be approximately 460339200 bytes, with 4 columns of 28771200 numbers.
2-Dimensional Tab-Separated Tables Y X Table X Y Table	Tab-separated-values (tsv) file with information about the independent variables (i.e., grids). The list to the left allows you to specify the format of the table. Note: The variable running across the top of the table (identifying columns) is listed first and the variable running down the side of the table (identifying rows) is listed second.
GIS-Compatible Formats	
There are three GIS-compatible formats available.	
2-Dimensional Table	A 2-dimensional ascii file that includes an ArcInfo Header.
IDA Image	File(s) in the Image Display and Analysis format. Typically used with WinDisp.
LAN Image	File(s) in the ERDAS LAN format. Typically used with various GIS programs, including ArcView and HealthMapper.
GeoTIFF Image	File in GeoTIFF format. Typically used with various GIS programs, including ArcView and ENVI.
Data Only Formats	
These files contain just the data without any of the available metadata.	
Binary direct access	A big-endian, ieee single-precision file in floating-point format. Also known as a binary random access file. This is a random-access file; it is purely data with no record-structuring information. The data is structured to correspond to the independent variables (i.e., grids) in X Y

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DEC ALPHA direct access	Same as the binary random/direct access format above except that it is byte-swapped for DEC ALPHA's and PC's (little-endian).
Binary FORTRAN sequential access	A big-endian, ieee, single-precision file in floating-point format. This is a sequential-access file with each record containing all the X Y points. It must be read using FORTRAN sequential access. Records correspond to T.
DEC ALPHA sequential access	Same as the binary sequential access format above except that it is byte-swapped for DEC ALPHA's and PC's (little-endian).
Text with tab-separated-values	Text file where data values corresponding to different X are separated by tabs and data values corresponding to different Y T are on different lines. This is readable by most programs, including spreadsheets, but will be about four times larger than the binary or netCDF/HDF files noted above.
Text	Text file where data is arranged in chunks of X Y. There are five values per line and each chunk starts on a new line. This will be about four times larger than the binary or netCDF/HDF files.

Anything and everything you do in the DL

- ❖ is saved in the URL,
and can be bookmarked or shared
- ❖ is expressed in scripting language that can be viewed
and edited in “expert mode”



Introduction to the Data Library [DL]

a tool to analyze and visualize data

I. Introduction

Alessandra Giannini
alesall@iri.columbia.edu

