



32243

(place Acollegia Tile)

N - 0 B

dillo-

Introduction to the Data Library (DL):

Visualization

Training Module November 29, 2016 Version 1.0



International Research Institute for Climate and Society (IRI), (2016). Introduction to the Data Library (DL)-Visualization. November 29, Version 1.0. Palisades: IRI.

This work is licensed under a Creative Commons Attribution-Non Commercial 4.0 International License (http://creativecommons.org/licenses/by-nc/4.0/) and may be adapted or reproduced with attribution to the IRI and for any non-commercial purpose.

CONTENTS

Intro	oduction to the Data Library (DL) - Visualization
1.1	Introduction
1.2	Overview
1.3	Access
1.4	Visualization of a time series
1.5	Visualization of a map
1.6	Summary
1.7	Quiz
1.8	Reference(s)

CHAPTER

ONE

INTRODUCTION TO THE DATA LIBRARY (DL) - VISUALIZATION

1.1 Introduction

The IRI Climate Data Library is a library of datasets. By library we mean a collection of datasets, collected from various sources, designed to make them more accessible for the library's users (Bluementhal, 2004). For this module we will be expanding on how the users can select other function which will refine the data selection to obtain the desired information. These other functions include, adding, subtracting averaging etc. Traditional GIS platforms are now widely used by planners and decision makers in society. However, they are highly-focused on geospatial capabilities and have limited functionality for temporal analysis. Without information on the latter, meaningful inference about the causation of disease outbreaks is impossible (Jacquez 2000). Furthermore, many tools are unable to readily process the vast quantities of space-time data associated with, for example, the outputs of a global climate model. The IRI Climate Data Library overcomes the limitations imposed by GIS platforms by being based on a much more general multi-dimensional data model that includes both space and time dimensions. All datasets, including GIS features (such as points, lines, and polygons) are geo-located and temporally referenced in a uniform framework.

€ @ 197.155.140.164/SOURCES/.NOAA/.NCDC/.ERSST/.version3b/.sst/X/-170/-120/RANGE/Y/-5/5/RANGE/[XYY]/average/# C Q Search	☆自	◙	÷	^ 9	≡
Data Library				Language	
Description Views Data Filters Data Selection Data Files Data Tables Expert Mode Data Views					
Image: Second					
Share					

Fig. 1.1: Accessing Functions from dta Library: Statistical Techniques in Data Library - A Tutorial

1.2 Overview

How are the functions categorized?

The Visualizations have 2 possible features:

- Visualization of a time series
- Visualization of a map

1.3 Access

The IRI Data Library can be accessed with the following links:

- Worldwide: http://iridl.ldeo.columbia.edu/
- Chile: http://www.climatedatalibrary.cl/
- Venezuela: http://datoteca.ole2.org/
- Uruguay: http://dlibrary.snia.gub.uy/
- Rwanda: http://maproom.meteorwanda.gov.rw/
- Ethiopia: http://www.ethiometmaprooms.gov.et:8082/
- Tanzania: http://maproom.meteo.go.tz/
- Mali: http://197.155.140.164/
- Ghana: http://maps.meteo.gov.gh:89/
- Zambia: http://41.72.104.142/
- Madagascar: http://map.meteomadagascar.mg/
- Peru: http://ons.snirh.gob.pe/
- Niger: http://cradata.agrhymet.ne/
- Kenya (KMD): http://kmddl.meteo.go.ke:8081/
- Kenya (ICPAC): http://digilib.icpac.net/

1.4 Visualization of a time series

For this set of examples we will be using the Sahel as the example and in Figure 1.2 we guide our user to see the "view" tab to show all the options. The expert mode should include the following in order to visualize the Sahel in a time series:

SOURCES .NOAA .NCDC .ERSST .version3b .sst

X -170 -120 RANGE	Ξ
-------------------	---

Y -5 5 RANGE

[X Y] average

📀 🕐 197155.140.164/SOURCES/.NOAA/.NCDC/.ERSST/.version3b/.sst/X/-170/-120/RANGE/Y/-5/5/RANGE/[X/Y]/average/# 🛛 😋 🗌 🔍 Search	☆自	◙	+	^ 9	≡
[Data Library] [T] [mean [NOAA NCDC ERSST version3b sst] [0.0 meters] [Jan 1854 - May 2015]				Languag	
Description Views Data Filters Data Selection Data Files Data Tables Expert Mode					
Data Views					
RR Implots Implots Implots Implots Implots Implots Implot Implo					
Share Share Contact Us, Contact Us, Contact Us,					

Fig. 1.2: Visualization tab (a) and options (b)

There are three visualizations plot options under the "view" tab seen in Figure 1.2 (b), and they can always be changed. For this example we will be using the line plot as an option of visualization and the result should be just like Figure 1.3.



Fig. 1.3: Line plot of the Sahel in a time series

For more options on the plot the user can go into the "more options" (Figure 1.4) and the user can download the plots in the desired format.

The expert mode should include the following, in order to visualize in a plot or dot form:

SOURCES .NOAA .NCDC .ERSST .version3b .sst

X -170 -120 RANGE

Y -5 5 RANGE

[X Y] average

T fig: line :fig or T fig: dots :fig

1.5 Visualization of a map

When wanting to view a map the expert mode would not include the average since we are not looking for a time series:

SOURCES .NOAA .NCDC .ERSST .version3b .sst

X -170 -120 RANGE

Y -5 5 RANGE

The user can still go into the "view" tab and choose the different types of "plots" with color or contours (Figure 1.5)

For this example we will be choosing the "colors with coasts" option (Figure 1.6).

The results of this plot should be just like Figure 1.7 (a) and as seen in the Figure the user can choose different types of plots such as colors, contours, colors et contours etc. Or even choose contouring features for the map (Figure 1.7 (b)).

For more options and downloading in different formats the user can go into "more options" (Figure 1.8).



Get Data	Entire Dataset	data in view	Export		Edit plot
Page Formats	documented page	plain page	linked pdf	cut and paste lin a	more options

Fig. 1.4: More options for the line plot



Fig. 1.5: Visualization of a map

🔄 🖲 197155.140.164/SOURCES/.NOAA/.NCDC/.ERSST/.version3b/.sst/X/-170/-120/RANGE/I/-5/5/RANGE/#views C 📃 Q. Search	☆自	◙	÷	^ 9	≡
Data Library				Language	
Description Views Data Filters Data Selection Data Files Data Tables Expert Mode Data Views					
Views data as colors with land contours with land contours with land	ons				
Share Contact Us,					

Fig. 1.6: Choose "colors with coasts" option

Image:	☆ 自 ♥ ↓	♠ ♥ ≡
Data Library Y Zev T NOAA NCDC ERSST version3b sst 171W - 119W 7S - 7N 0.0 meters Jan 1854 - May 2015		Language english
Description Views Data Filters Data Selection Data Files Data Tables Expert Mode Data Views		
Wext data as colors data as contours colors with land contours with land colors with coasts		
Share Share Contact Us, Contact Us, Contact Us,		

Fig. 1.7: Customizing the plot options



Get Data	Entire Dataset	data in view	Export		Edit plot
Page Formats	documented page	plain page	linked pdf	cut and paste link	more options

Fig. 1.8: More options (a) and downloads (b)

In the "more options" the user can press the "plot' tab (Figure 1.9) which will open some form of expert mode that allows the changing of color scale [colorscale] and addition of contours of countries or other administrative units etc. (Figure 1.9 b)



Fig. 1.9: More on "More options" (a) and expert mode like result from "plot" tab

For more definition the color scale can be changes (Figure 1.10(a)) as well as the adding administrative units (Figure 1.10(b))



Fig. 1.10: Changing the color scale (a) Adding administrative units (b)

We would also like to encourage the user to learn the "expert mode" commands without having to go to the "views" tab. The command is seen in Figure 1.11 and can be added to the box shown in the same figure.

1.5.1 Controls to Create an Animation

Figure 1.12 shows the different ways the map can be animated to make it more interactive and follow the steps 1-4 in that figure.

1.6 Summary

From this module the user is expected to have knowledge on how to select visualization options that can be animated and customized accordingly.



Fig. 1.11: Expert Mode command



Fig. 1.12: Control Steps to create an animated map

1.7 Quiz

Please answer the following questions using the IRI Data Library

- Q1. What kind of visualizations are possible through the DL?
- Q2. There is only a one visualization plot option (T/F)
- Q3. The obtained plots can be downloaded in many formats (T/F)

1.7.1 Quiz - Answers

A1. Visualization of a time series and Visualization of a map.

A2. False.

A3. True.

•

1.8 Reference(s)