

EMERALD Quick Start Guide

-To begin, the user should familiarize themselves with the basics of EMERALD. Note the Menu, located in the top left of the screen. It is a drop down menu used to navigate through EMERALD, and reads as follows:



-The main submenus to quickly and easily become productive are the DataSets, Request Data, Import Data, and Export Data menus.

-To begin, scroll over the DataSets submenu. This submenu displays the created datasets in numerical order and houses the dataset option: New DataSet, Delete DataSets, and Edit Current DataSet.

-To create a new DataSet, select New DataSet. This will link the user to a new page where the settings of the new dataset can be adjusted:

Edit DataSet 12

Description:

Data Path: **/home/eraymond/Import/12**

Main Figure for DS Page:

Velocity Model:

DataSet Status:

Component:

Notification methods

e-mail to raymon23@tcnj.edu

log to internal

text to 8503395383@tmomail.net

-The Edit Current DataSet button will send you to this page again at any time once the DataSet has been created.

-To receive notifications when a task is completed in the dataset, check one of the notification boxes.

-Once the settings are to the user's satisfaction, click the save button and the DataSet will be created.

-The next page to load will be the "home page" for the new dataset. The page will have several empty graph boxes that will read "No Data", and after a few moments a large map of the world will load in the center of the page. EMERALD is now ready to receive data.

-There are two ways to Import data in EMERALD:

- Use the Import Data tool under the Menu
- Use the Request Data tool under the Menu

Import Data Method

-The Import Data tool should be used to import data off of the user's hard drive. To do this, the .sac files on the hard drive must be moved to the Import directory created by EMERALD on the EMERALD server.

-The location, or "**Data Path**," of the file can be found on both the "Edit Current DataSet" page and the "Import Data" page. Connect to the EMERALD server using the same user name and password you use to log into EMERALD, navigate to the directory, and move the .sac files into the "Import/#" directory using either the sftp or scp command.

-Once the files have been moved, open the Menu and select the submenu "Import Data." Make sure the .sac files are in the proper directory as dictated by the Data Path, and click the "Import sac files" button.

-The .sac files will take some time to import. EMERALD will notify the user when the importing has been completed (if the user has checked a notification method).

Request Data Method

-EMERALD is equipped with a data request and acquisition function that allows users to directly access data from the IRIS DMC (Data Management Center). To use this feature, select "Request Data" in the Menu and click "New Data Request."

-The next page to load will be the "Create a new Data Request" page. This page is used to edit the various settings and restrictions for the data (such as

Starting/Ending Dates, Velocity Model, etc.). Once the settings have been chosen, click the save button at the bottom of the page.

-Once the Request has saved, look to the bottom of the green box on the left side of the page titled "Request Summary." The Components, Events, and Stations links should now be hyperlinks to new pages (blue text). Each of these links loads a page with options that are specific to the link, and they must be set up before the Data Request can be processed.



Request Summary

Name: [Quick Start](#)
Status: new, unprocessed

Date Range: 2010-01-01 to 2011-01-01

Return: from 5 seconds after P to 30 seconds after P

Velocity Model: iasp91

Data Center: IRIS DMC

Data Quality: B

Minimum Length: 10 s

Return Longest Trace Only: yes

This request contains:
0 [Components](#)
0 [Events](#)
0 [Stations](#)

[Process Data Request](#)

-The Component link loads a page of possible seismic components. Select the desired components (for example, the common component combination is BHN, BHE, BHZ). Scroll to the bottom of the page and click Save when finished.

-The Event page allows the user to set the parameters (such as magnitude and depth) for the events of the request. Once the parameters are satisfactory, click on the Save button.

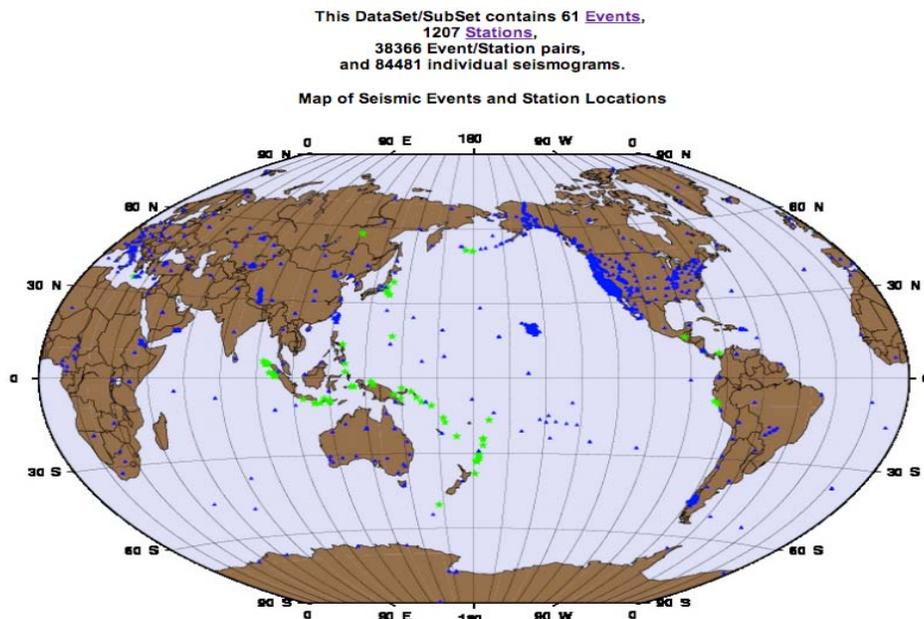
-Next, EMERALD will access and load the events within IRIS DMC that meet the set parameters. Users can then navigate through the events and select any they wish to receive. Users can also click on the **all/none** links at the top of the list to select all or none at once. After the selections have been made, click Save and proceed to the Stations link.

-The Stations link will load a list of stations that EMERALD has access to through the IRIS DMC. From this list, the user can select the stations from which they will be receiving data. Again, users can find the **all/none** options at the top of the list. Once the stations have been selected, scroll to the bottom of the page and click Save.

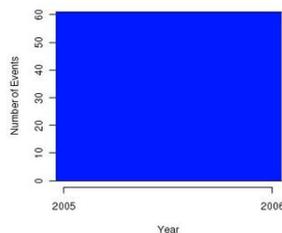
-Once EMERALD has saved the selections, be sure to look at the “Request Summary” again to ensure that all of the contents of the request (Components, Events, Stations) read a non-zero value next to them. If a link does have a zero next to it, click on the link and readjust the parameters.

-When the data request is ready, click “Process Data Request.” This will take some time to complete. To monitor the progress of the processing, refresh the page.

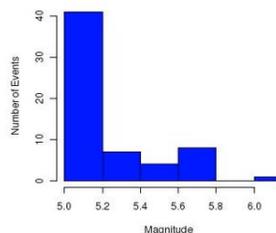
-Once the processing is completed, click on the “Data Set #” link at the top of the page to load the home page. The home page should now look similar to this:



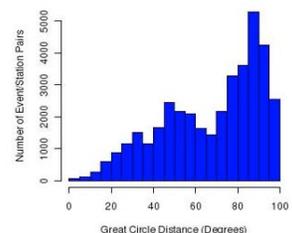
Histogram of Seismic Events by Year



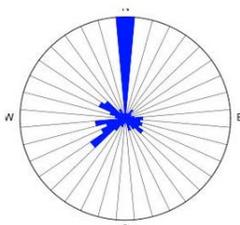
Histogram of Seismic Event Magnitude



Histogram of Great Circle Distances



Rose Diagram of Back Azimuths



Seismogram Count by Event/Station Pair

5281 Pairs have 1 Seismogram [Reject](#) [Review](#)
146 Pairs have 2 Seismograms [Reject](#) [Review](#)
25905 Pairs have 3 Seismograms [Reject](#) [Review](#)
18 Pairs have 4 Seismograms [Reject](#) [Review](#)
19 Pairs have 5 Seismograms [Reject](#) [Review](#)
144 Pairs have 6 Seismograms [Reject](#) [Review](#)
2 Pairs have 7 Seismograms [Reject](#) [Review](#)
15 Pairs have 9 Seismograms [Reject](#) [Review](#)
1 Pair has 13 Seismograms [Reject](#) [Review](#)

Component Count by Event/Station Pair

5294 Pairs have 1 Component [Reject](#) [Review](#)
136 Pairs have 2 Components [Reject](#) [Review](#)
26101 Pairs have 3 Components [Reject](#) [Review](#)

-The data is organized by both component and seismogram count per event and station pair. To reject all the data of a particular component or seismogram count click the [Reject](#) button. To review and sort the quality of the data, select [Review](#).

-The [Review](#) feature allows the data to be inspected one station reading at a time. The seismogram readings can be given number ratings (0-5) or rejected one by one. The Review process is used as a means to control the quality of the data for later use.

-Users can also edit and filter the data by means of “processes.” These processes can be found under “Process” in the Menu.

-When a process is selected, a new page will load asking the user to fill out any parameters (if needed, as well as to target or create a subset for the processed data. The latter allows users to keep the processed data and raw data separated. To access a subset once it is created, select it from under SubSets with the Menu.

-Once all of the data has been reviewed, it can be exported. To export to .sac files, select Export data from the Menu.

-A new page will load list the exporting options (naming convention for the file and file organization) as well as the path the files will be exported to.

-Click the “Export sac files” to begin the exporting process. This will take a few minutes to complete.

-To find the sac files once they have been exported, connect to the EMERALD server using the same user name and password you use to log into EMERALD, and navigate to the Data Path from the Export Data page. If the user is using a Unix Shell to navigate, copy the Data Path exactly as EMERALD displays it into a change directory command (cd “DataPath”). Use the scp or sftp commands to download the exported files to your home machine for further processing.