

# GMVs with Sweetwater

Danielle F. Sumy

IRIS Consortium

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# On Monday, we used FetchData

- `FetchData -s 2014,04,18,14,27,26 -e 2014,04,18,14,57,26 -N XB -C "BH?" -o sweetwaterBH.mseed -m sweetwaterBH.metadata`
- `FetchData -s 2014,04,18,14,27,26 -e 2014,04,18,14,57,26 -N XB -C DPZ -o sweetwaterDPZ.mseed -m sweetwaterDPZ.metadata`

# IRIS Supported Software » mseed2sac

## Overview

A program to convert miniSEED data to SAC format.

An optional metadata file may be supplied that contains values for the SAC headers that are not available in Mini-SEED. An event location may be supplied on the command line for placement into the SAC headers.

To download the source code either download the tar/zip from the [Files](#) tab or check it out using Subversion (svn) using the path indicated on the [Repository](#) tab.

This converter should work in Unix/Linux/Mac OSX and Windows.

### Compiling the program

GNU make (or compatible) may be required to build the software. On some Solaris versions, the default *make* is known to fail, instead GNU make is often available as *gmake*. If GNU make is not available a work around is to remove the line "nozip: LOCALFLAGS = -DNOFDZIP" from src/Makefile.

- Category: Conversion Program
- Language: C / C++
- Keywords:  
miniSEED SAC

### Issue tracking

- Bug: 0 open / 1
- Feature: 6 open / 6
- Support: 1 open / 1

[View all issues](#)

## Then used 'mseed2sac'

- `mseed2sac sweetwaterBH.mseed -m sweetwaterBH.metadata`
- `mseed2sac sweetwaterDPZ.mseed -m sweetwaterDPZ.metadata`

# SAC commands

The broadband stations operate at 20 sps.

The nodes operate at 500 sps.

We want to make the two types of stations the same sample rate.

`r *SAC`

`rmean`

`rtr`

`taper`

`decimate 5 filter on`

We have BH? channels!

You can try these steps

OR

You can download from the 'Agenda' tab  
(Sweetwater.zip)

# Let's Build a GMV!

ds.iris.edu/ds/products/usarraygmv/

Resources/Search



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## Data Services Products: USArrayGMV

The USArray Ground Motion Visualization

### Summary

Visualizations of real data showing how seismic waves sweep across the USArray network of seismic stations. Watch how seismic waves from earthquakes in the US and around the world cause the ground to move at each seismometer.

### Quicklinks

- [View GMVs](#)
- [Super \(combined\) GMVs](#)

- [Download MATLAB script to create customized GMVs](#)

All information in README, but important

{INSTALL\_DIR}/IRIS\_DMC\_GMV/matTaup/lib/matTaup.jar

to

{MATLAB\_DIR}/toolbox/local/classpath.txt

Place the IRIS\_DMC\_GMV.zip in your {INSTALL\_DIR}

- Contains Sweetwater data in SAC files
- Contains a file called event.asc
- Both are in the 'data' directory
  
- In the 'bin' directory, we want to run GMV\_Sweetwater.m, which will call 'event.asc'



# What's in event.asc?

```
ID|123
TITLE|GUERRERO, MEXICO, M=7.2, 2014-04-18, 0.001-0.01 Hz
WIN_START|2014-04-18 14:32:26
WIN_END|2014-04-18 14:57:26
WIN_STEP|4
EVENT_LAT|17.552
EVENT_LON|-100.816
EVENT_TIME|2014-04-18 14:27:26
SHOW_GC|1
MAGNIFICATION|5
LL_LAT|32.50
LL_LON|-100.90
UR_LAT|33.0
UR_LON|-100.20
WIDTH|800
CHANNEL|SEIS_BHZ
LP|0.001
HP|0.01
```

# As this stands... it doesn't work!

- Spend 10-15 minutes getting a sense of what the GMV is doing
- Do NOT change the GMV\_Sweetwater.m file, as this part does work!
- Change the event.asc, and play around with different ways to look at the data
- HINT: You may want to look at the broadband and nodal data separately to compare