Isola

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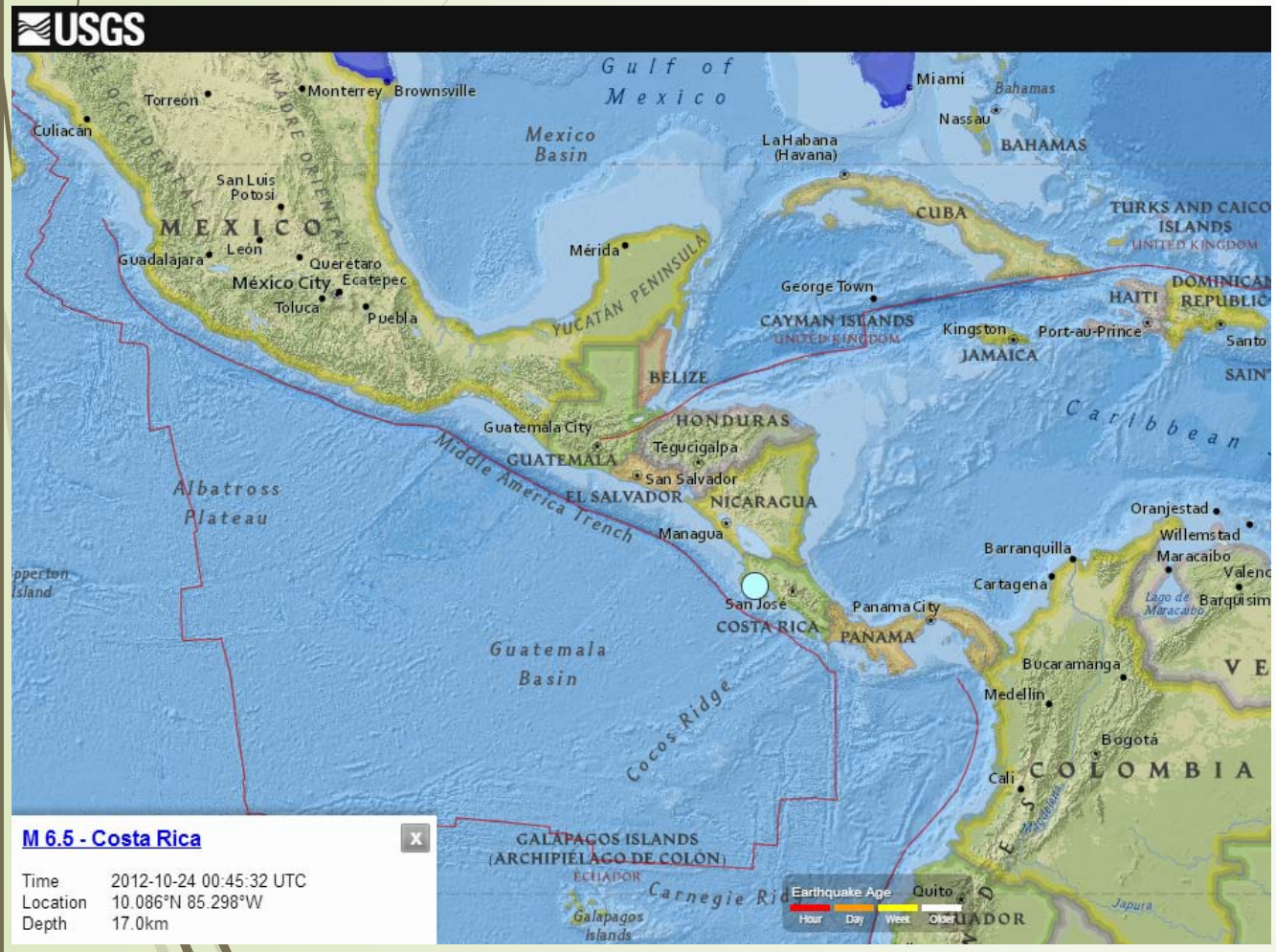
Eventinfo



Date (YYYYMMDD)

20121024

Origin Time

Hour

00

Min

45

Seconds

31.00

Lat (Deg,Min)

38.00

50.00

DDMM-> DDEG

Lon (Deg,Min)

21.00

50.00

Lat (N) (Dec.Degrees)

9.718

Lon (E) (Dec.Degrees)

-85.586

Depth (km)

20

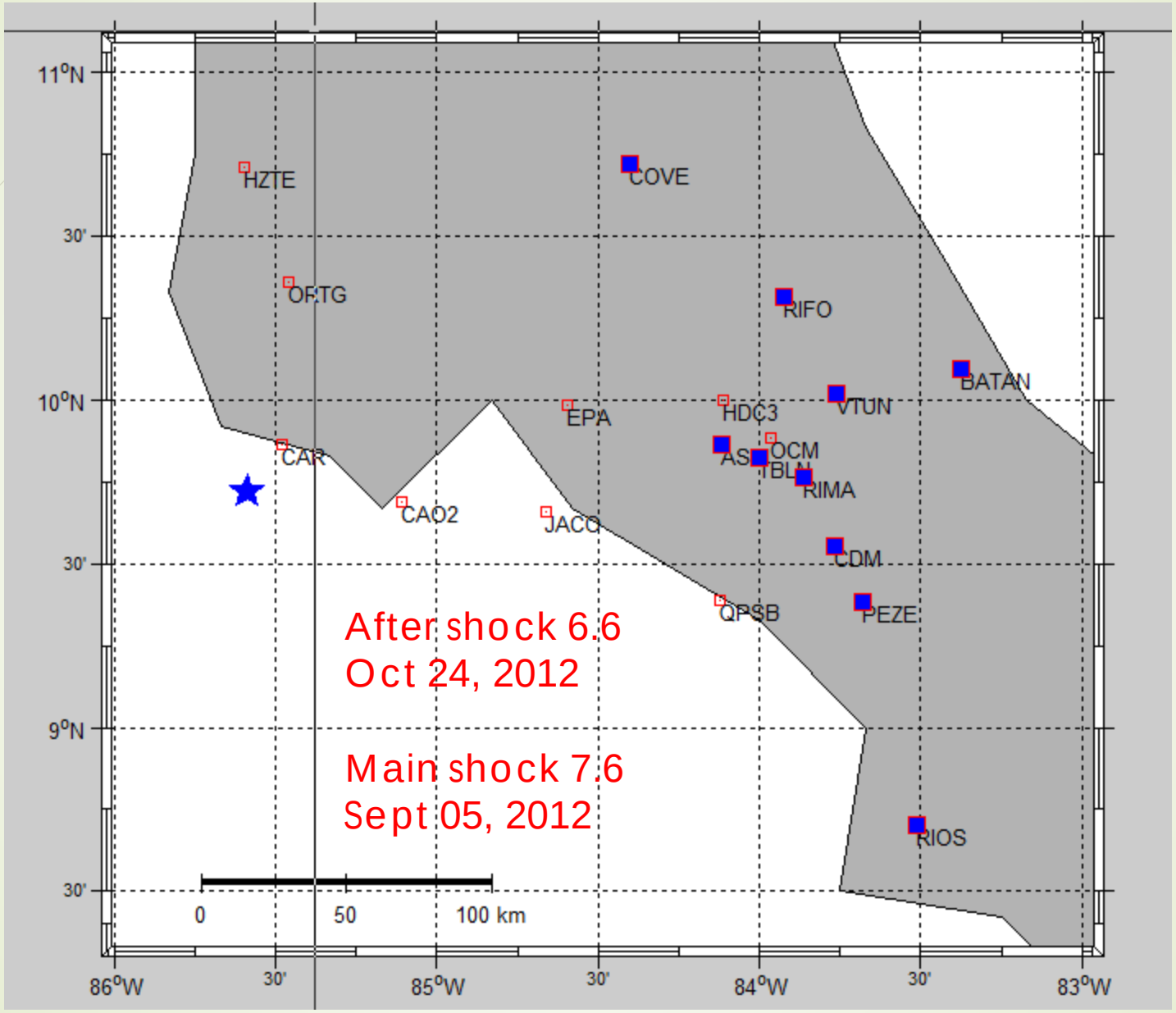
Comments

Magnitude

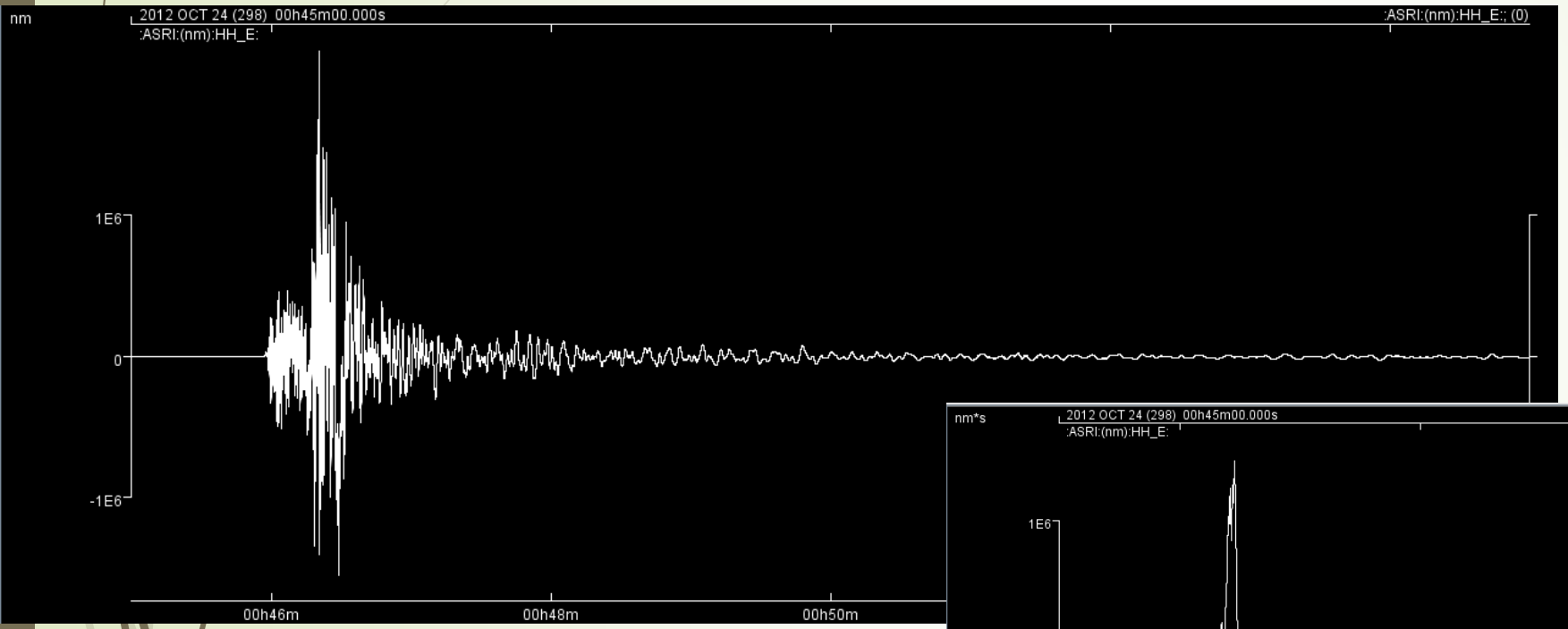
6.6

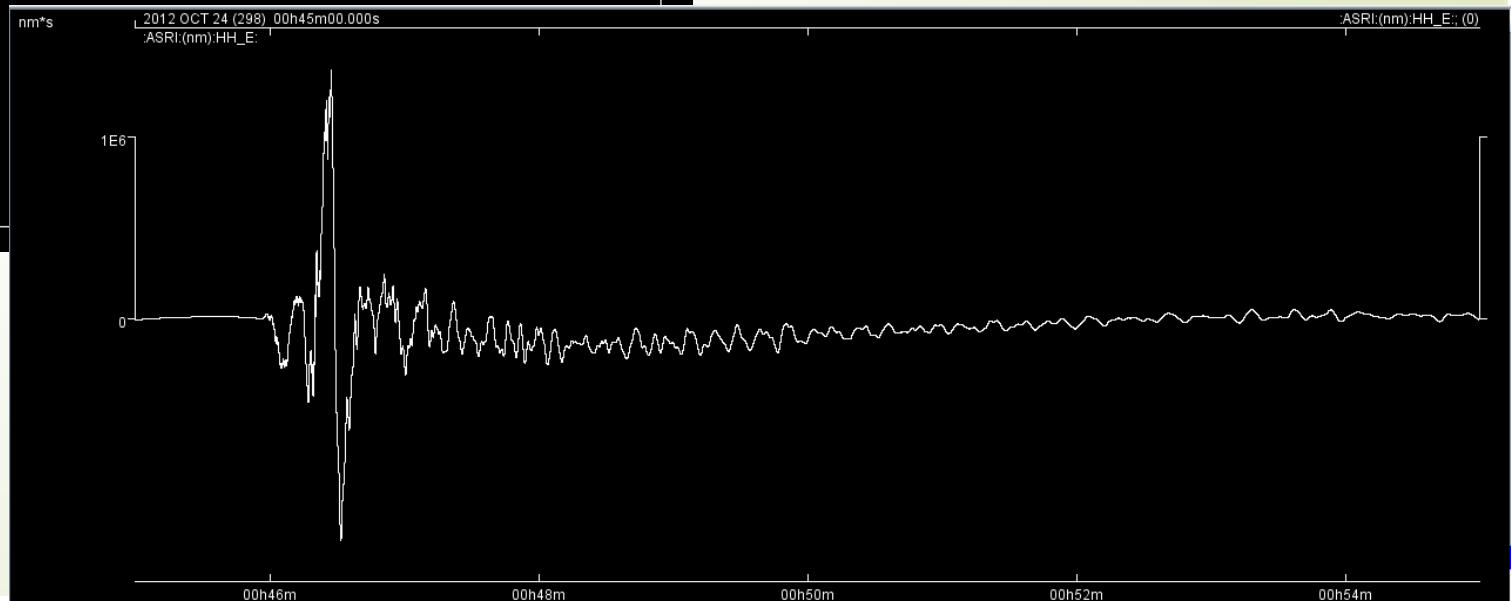
Location agency

OVSICORI-UNA

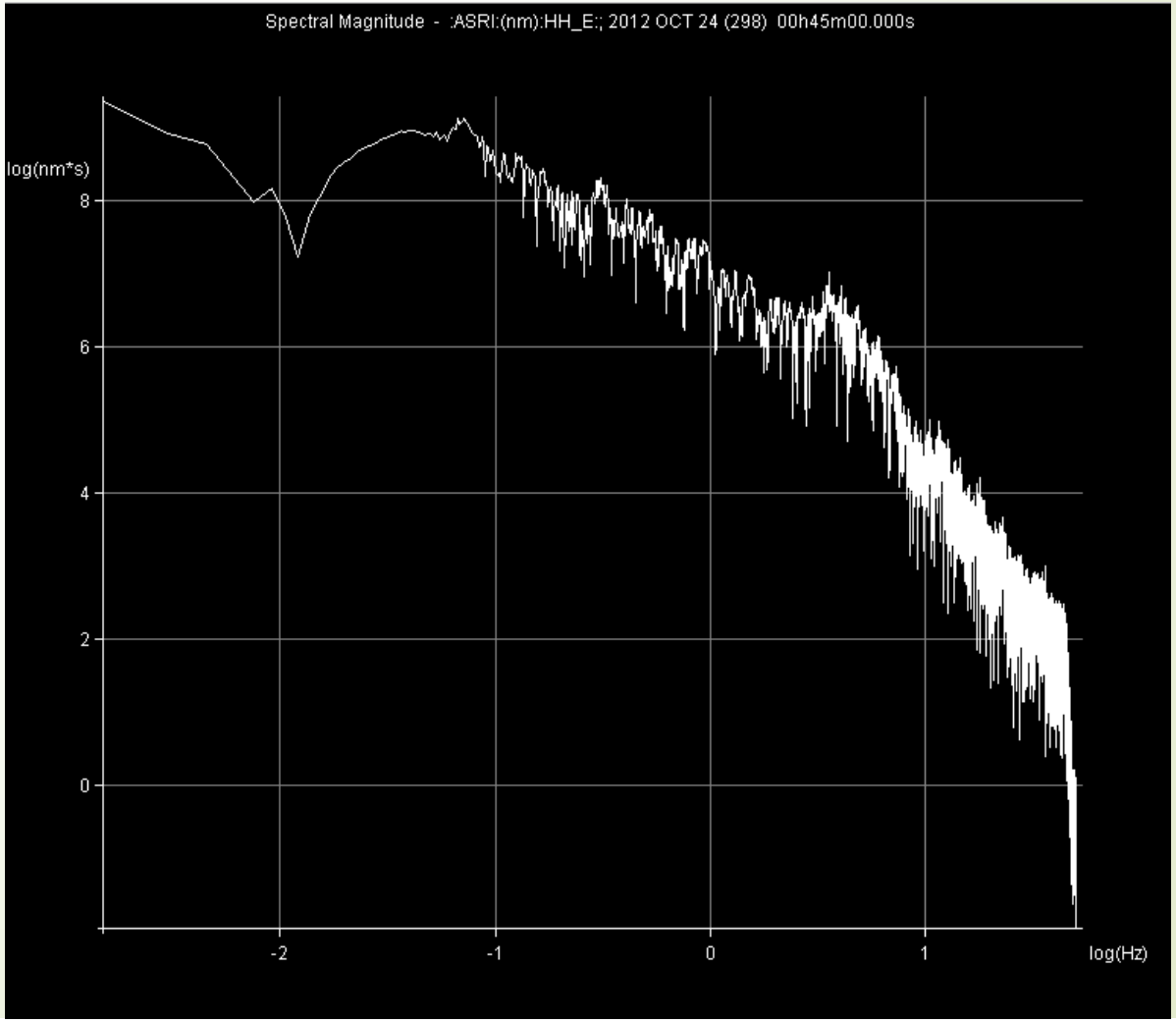

11°N
30'
10°N
30'
9°N
30'
86°W
30'
85°W
30'
84°W
30'
83°W
HZTE
COVE
OPTG
RIFO
BATAN
EPA
HDC3
VTUN
CAR
OCM
RIMA
CAO2
JACO
CDM
QPSB
PEZE
RIOS
After shock 6.6
Oct 24, 2012
Main shock 7.6
Sept 05, 2012
0
50
100 km

ASRI

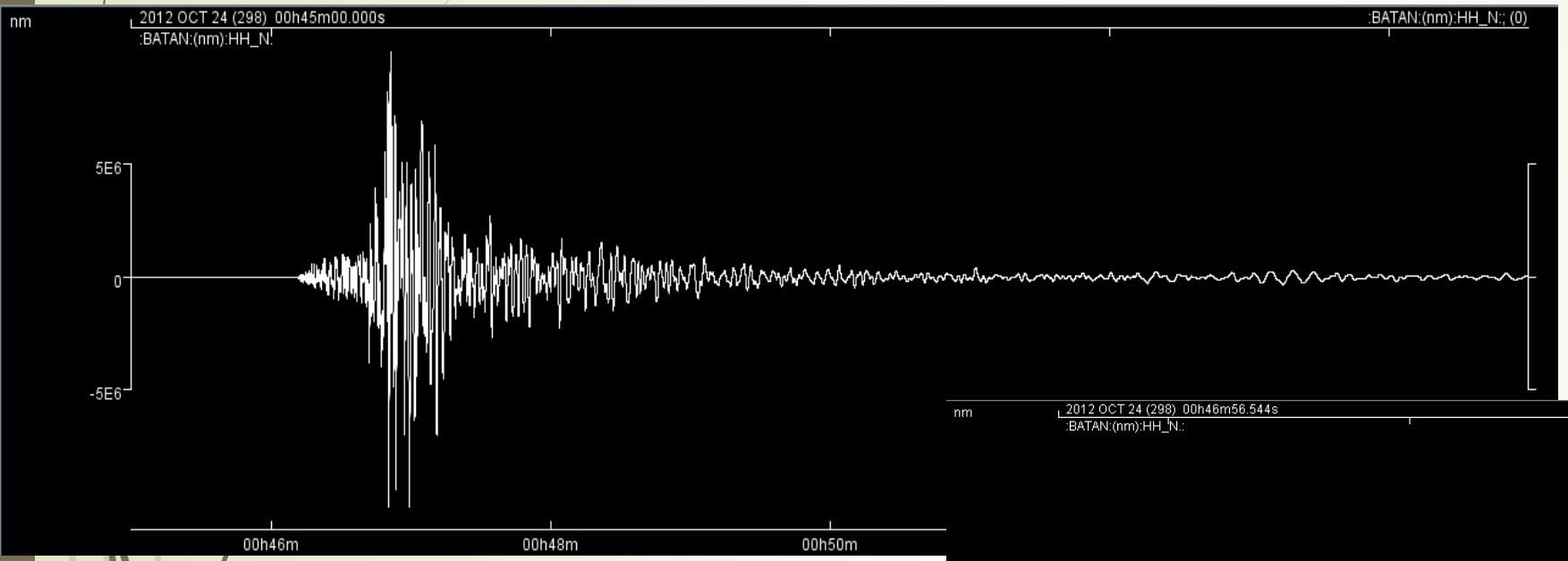

nm
2012 OCT 24 (298) 00h45m00.000s
:ASRI:(nm):HH_E:
:ASRI:(nm):HH_E:; (0)
1E6
0
-1E6
00h46m
00h48m
00h50m

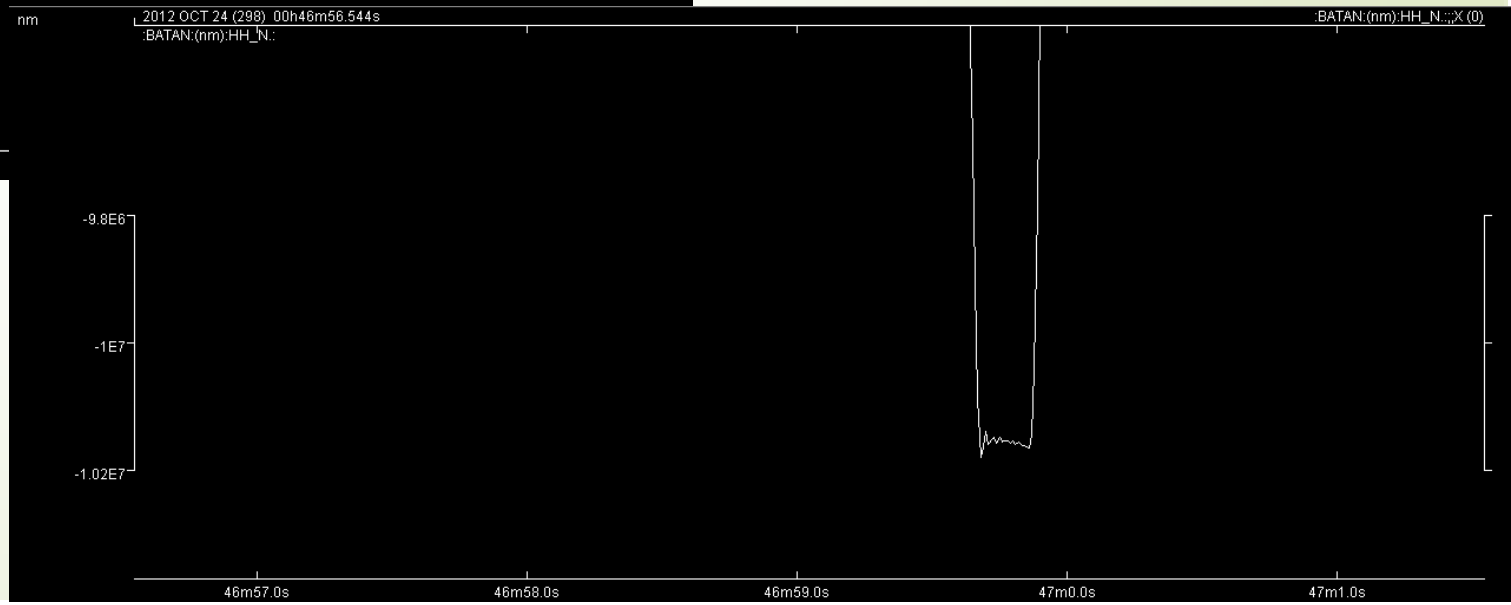

nm*s
2012 OCT 24 (298) 00h45m00.000s
:ASRI:(nm):HH_E:
:ASRI:(nm):HH_E:; (0)
1E6
0
00h46m
00h48m
00h50m
00h52m
00h54m

ASRI

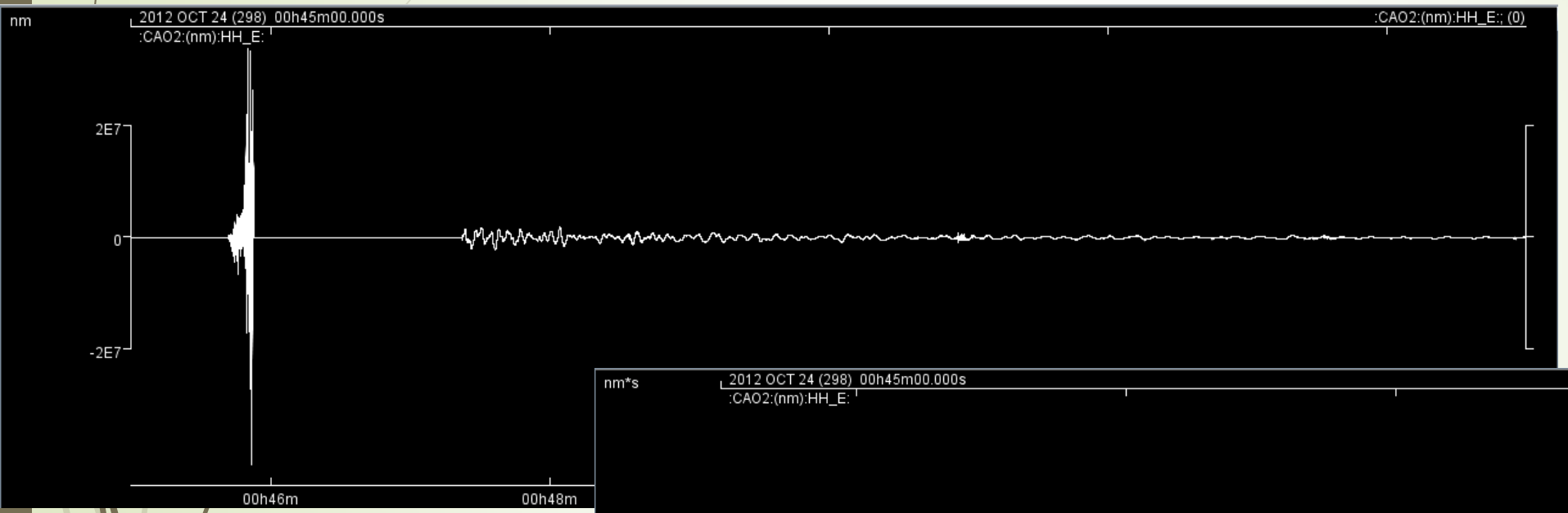

Spectral Magnitude - :ASRI:(nm):HH_E:; 2012 OCT 24 (298) 00h45m00.000s
log(nm*s)
8
6
4
2
0
-2
-1
0
1
log(Hz)

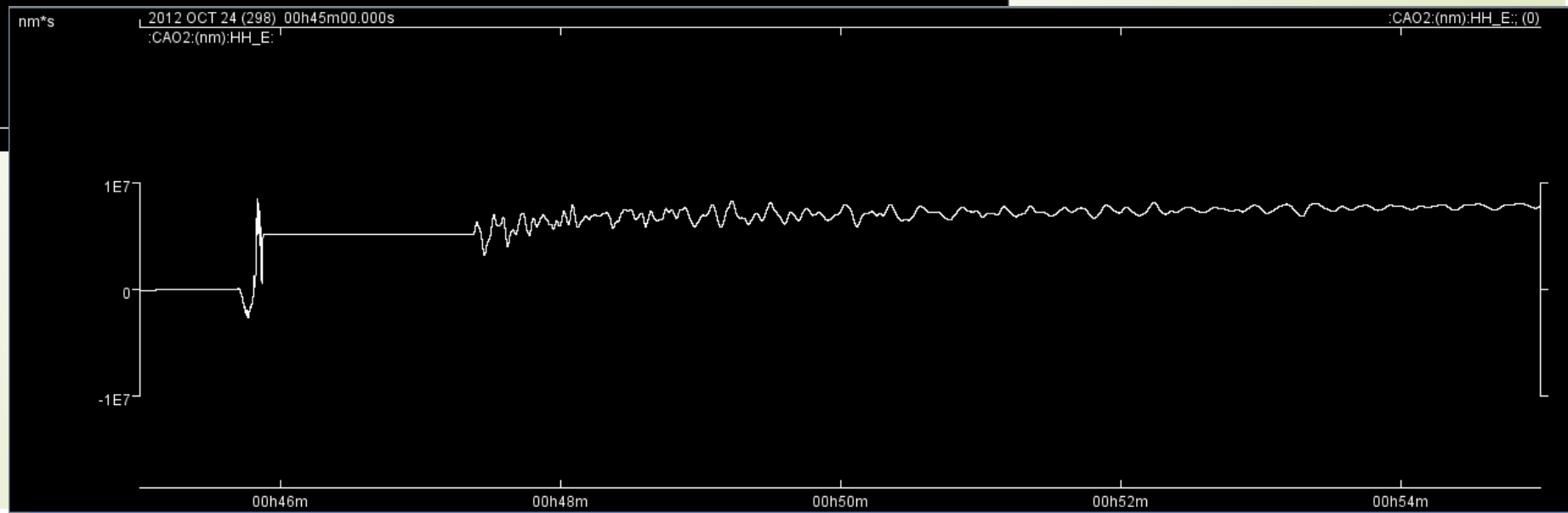
BATAN

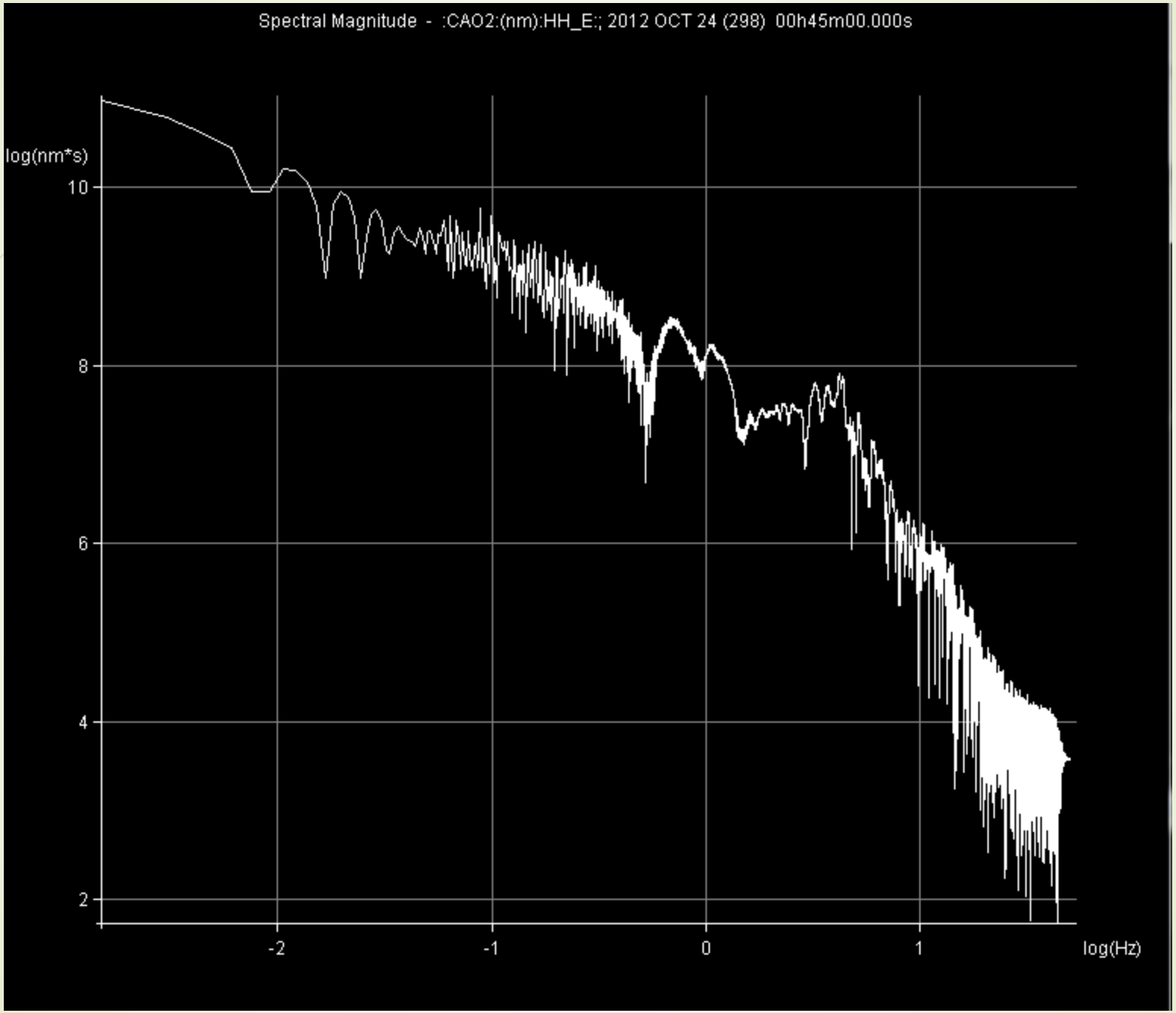

nm
2012 OCT 24 (298) 00h45m00.000s
:BATAN:(nm):HH_N:
:BATAN:(nm):HH_N:; (0)
5E6
0
-5E6
00h46m
00h48m
00h50m


nm
2012 OCT 24 (298) 00h46m56.544s
:BATAN:(nm):HH_N:
:BATAN:(nm):HH_N:;;X (0)
-9.8E6
-1E7
-1.02E7
46m57.0s
46m58.0s
46m59.0s
47m0.0s
47m1.0s

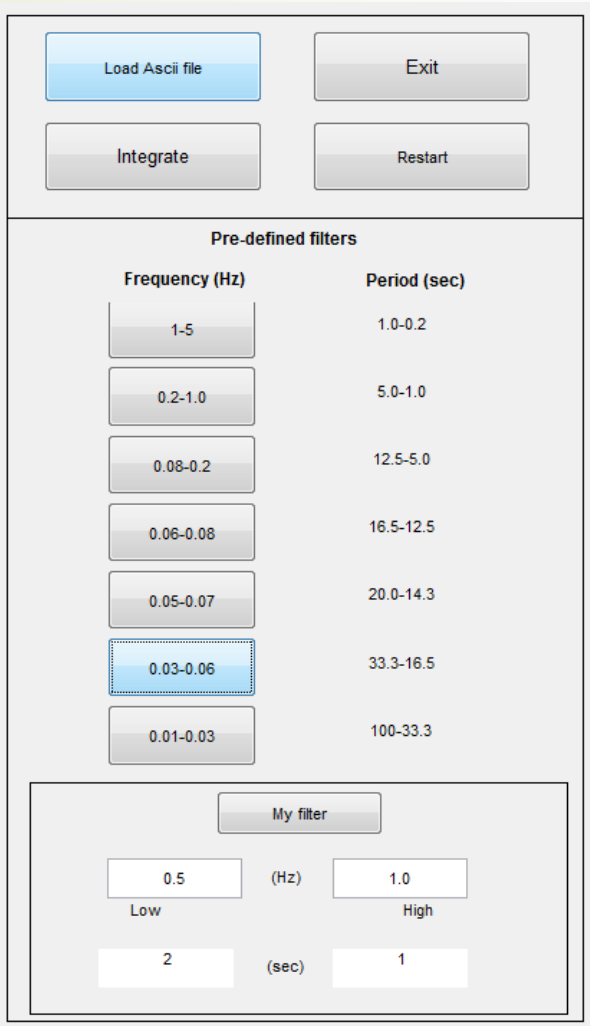
CAO2

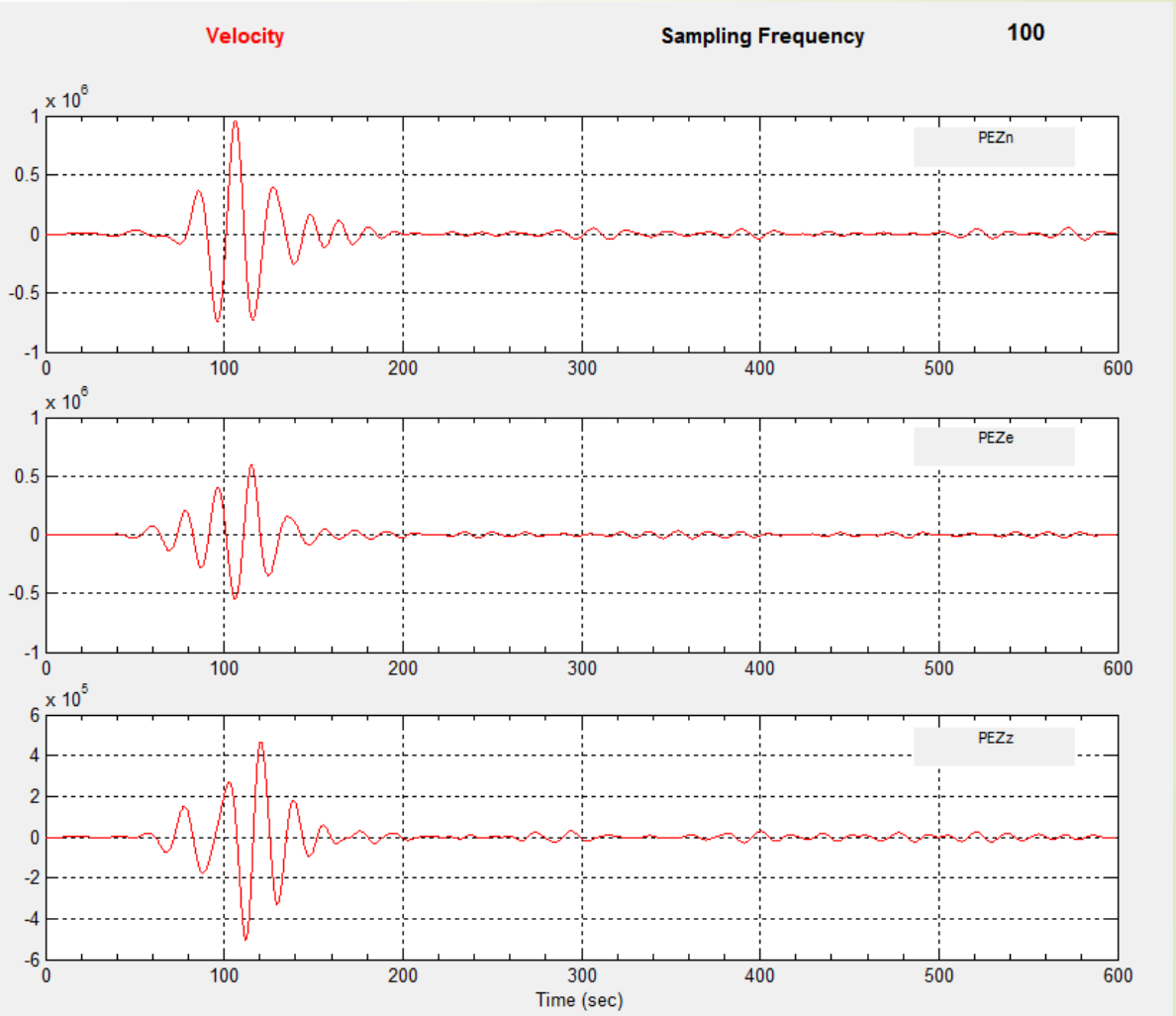

nm
2012 OCT 24 (298) 00h45m00.000s
:CAO2:(nm):HH_E:
:CAO2:(nm):HH_E:; (0)
2E7
0
-2E7
00h46m
00h48m


nm*s
2012 OCT 24 (298) 00h45m00.000s
:CAO2:(nm):HH_E:
:CAO2:(nm):HH_E:; (0)
1E7
0
-1E7
00h46m
00h48m
00h50m
00h52m
00h54m


Spectral Magnitude - :CAO2:(nm):HH_E:; 2012 OCT 24 (298) 00h45m00.000s
log(nm*s)
10
8
6
4
2
-2
-1
0
1
log(Hz)

Filters


Load Ascii file
Exit
Integrate
Restart
Pre-defined filters
Frequency (Hz)
Period (sec)
1-5
1.0-0.2
0.2-1.0
5.0-1.0
0.08-0.2
12.5-5.0
0.06-0.08
16.5-12.5
0.05-0.07
20.0-14.3
0.03-0.06
33.3-16.5
0.01-0.03
100-33.3
My filter
0.5
(Hz)
1.0
Low
High
2
(sec)
1


Velocity
Sampling Frequency
100
x 10^6
PEZn
PEZe
x 10^5
PEZz
Time (sec)

```
#               ========================================
#               +               +-----------------------------------------+
#               +               |   Response (Poles & Zeros), NS124 ch BHZ  |
#               +               +-----------------------------------------+
#
B053F03     Transfer function type:                A [Laplace Transform (Rad/sec)]
B053F04     Stage sequence number:                 1
B053F05     Response in units lookup:              M/S - Velocity in Meters Per Second
B053F06     Response out units lookup:             V - Volts
B053F07     A0 normalization factor:               8.184000E+11
B053F08     Normalization frequency:               1.000000E+00
B053F09     Number of zeroes:                      3
B053F14     Number of poles:                       7
#               Complex zeroes:
#                 i  real          imag          real_error    imag_error
B053F10-13    0  0.000000e+00  0.000000e+00  0.000000E+00  0.000000E+00
B053F10-13    1  0.000000e+00  0.000000e+00  0.000000E+00  0.000000E+00
B053F10-13    2 -4.341000e+02  0.000000e+00  0.000000E+00  0.000000E+00
#               Complex poles:
#                 i  real          imag          real_error    imag_error
B053F15-18    0 -3.691000e-02  3.712000e-02  0.000000E+00  0.000000E+00
B053F15-18    1 -3.691000e-02 -3.712000e-02  0.000000E+00  0.000000E+00
B053F15-18    2 -3.712000e+02  0.000000e+00  0.000000E+00  0.000000E+00
B053F15-18    3 -3.739000e+02  4.755000e+02  0.000000E+00  0.000000E+00
B053F15-18    4 -3.739000e+02 -4.755000e+02  0.000000E+00  0.000000E+00
B053F15-18    5 -5.884000e+02  1.508000e+03  0.000000E+00  0.000000E+00
B053F15-18    6 -5.884000e+02 -1.508000e+03  0.000000E+00  0.000000E+00
```

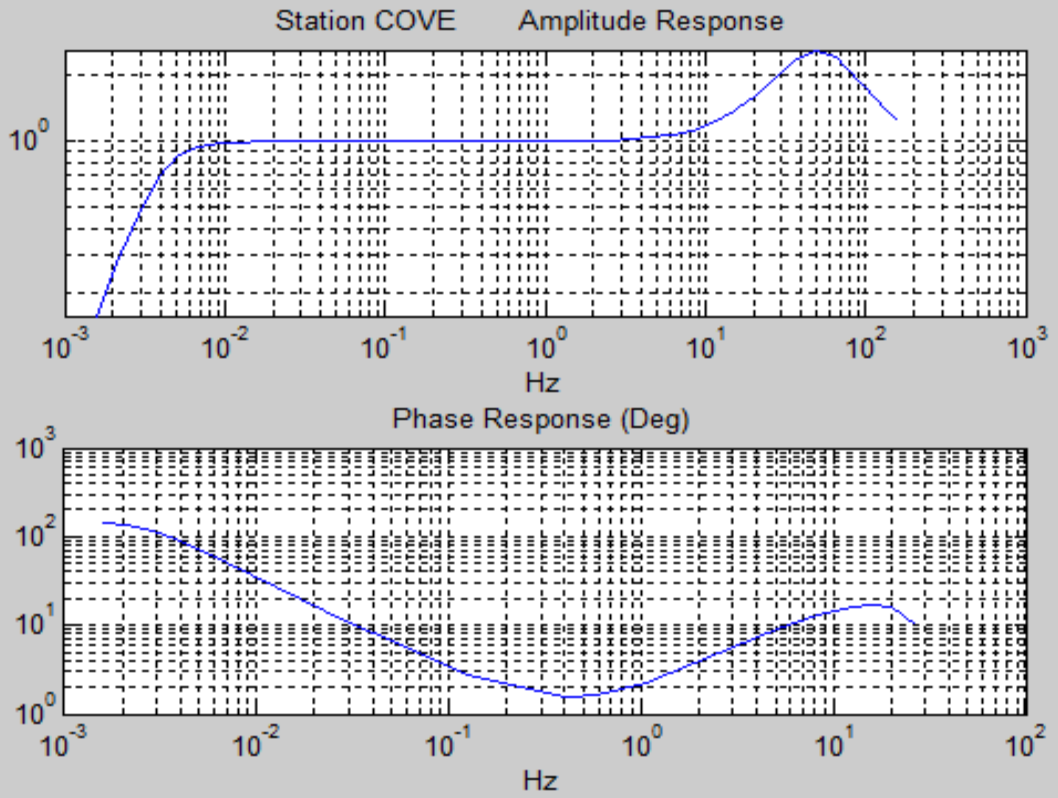
New Zero (rad/sec)	No of Zeroes: 5	New Pole (rad/sec)	No of Poles: 7
0	0	-0.0177	0.0176
0	0	-0.0177	-0.0176
-91.66	0	-126.7	0
-160.1	0	-192	259.1
-3207	0	-192	-259.1
		-557.7	1143
		-557.7	-1143

Station Name: **COVE**

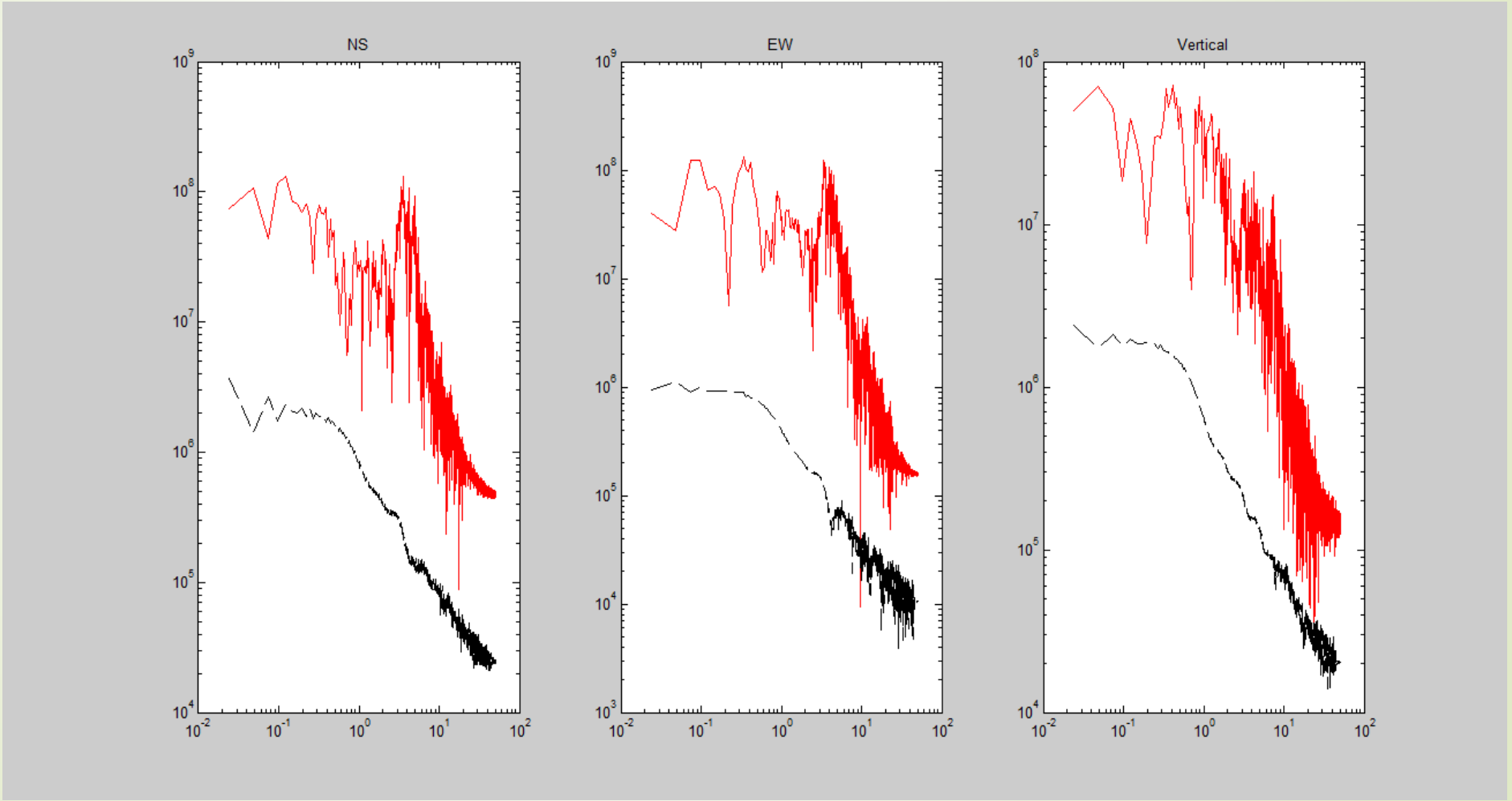
A0 normalization constant: **4.51700E+05**

Digitizer sensitivity (cnts/Volts): **1**

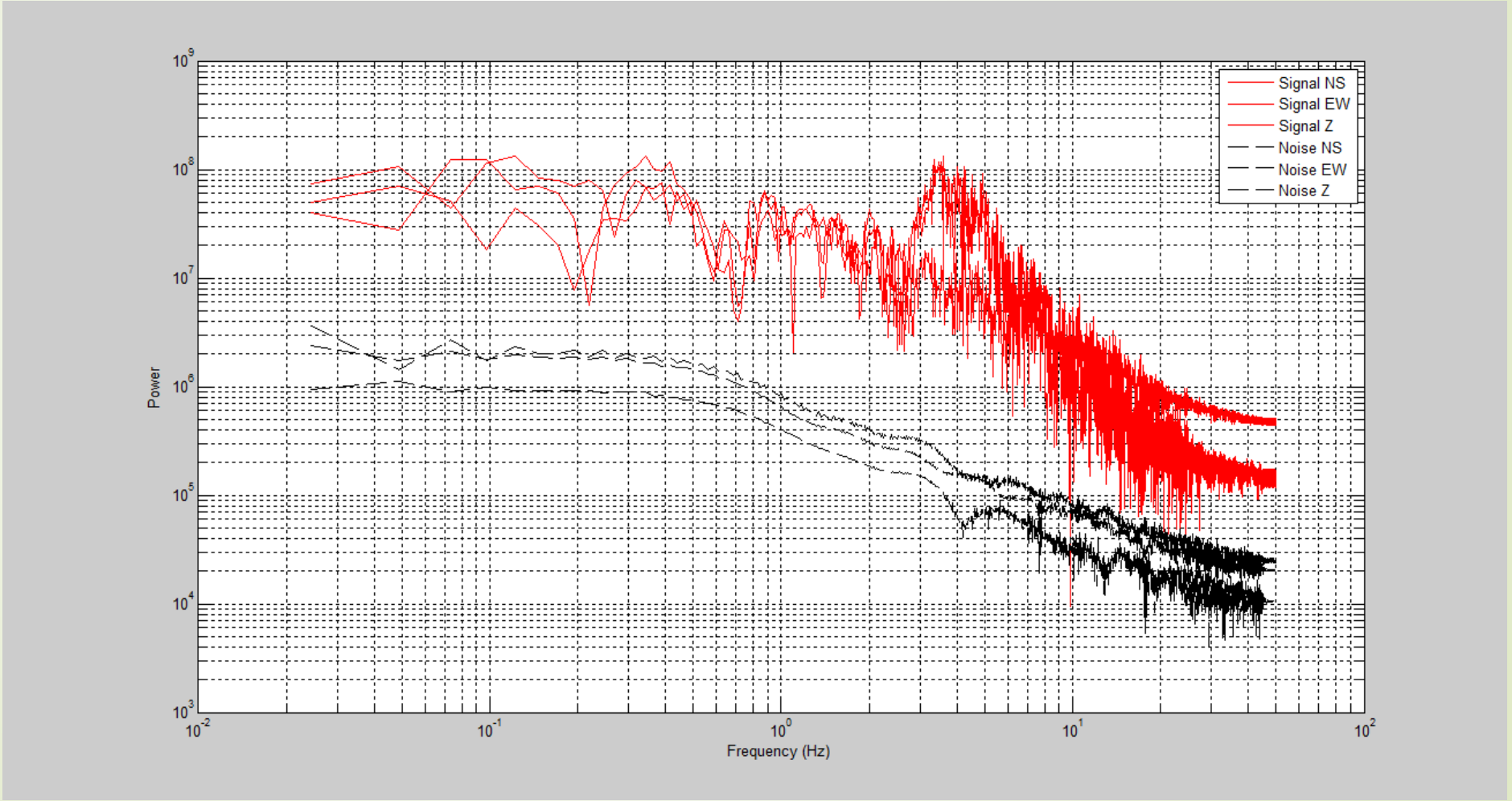
Seismometer sensitivity (V/m/sec): **1168.2**



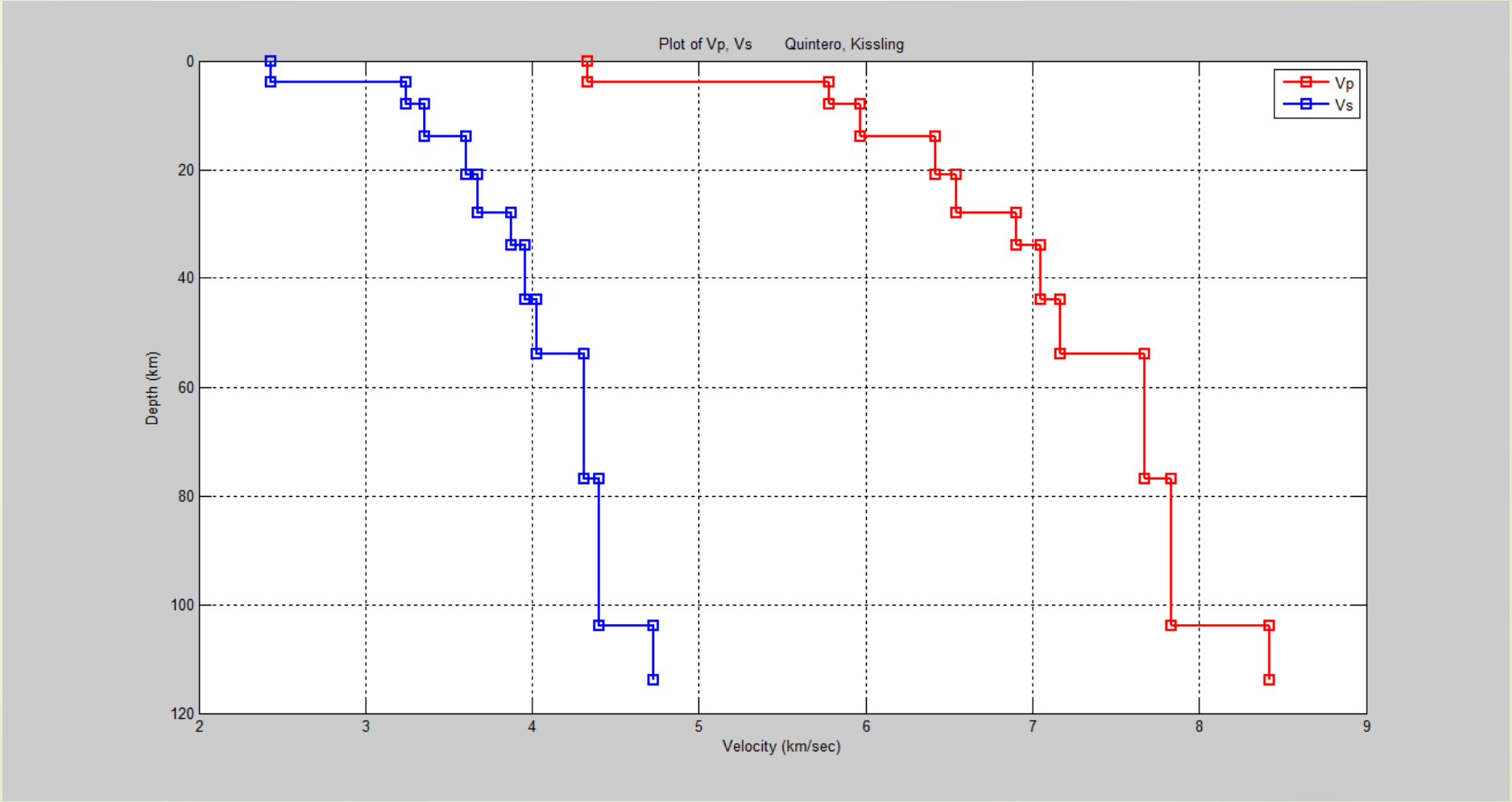
SNR for COVE Station



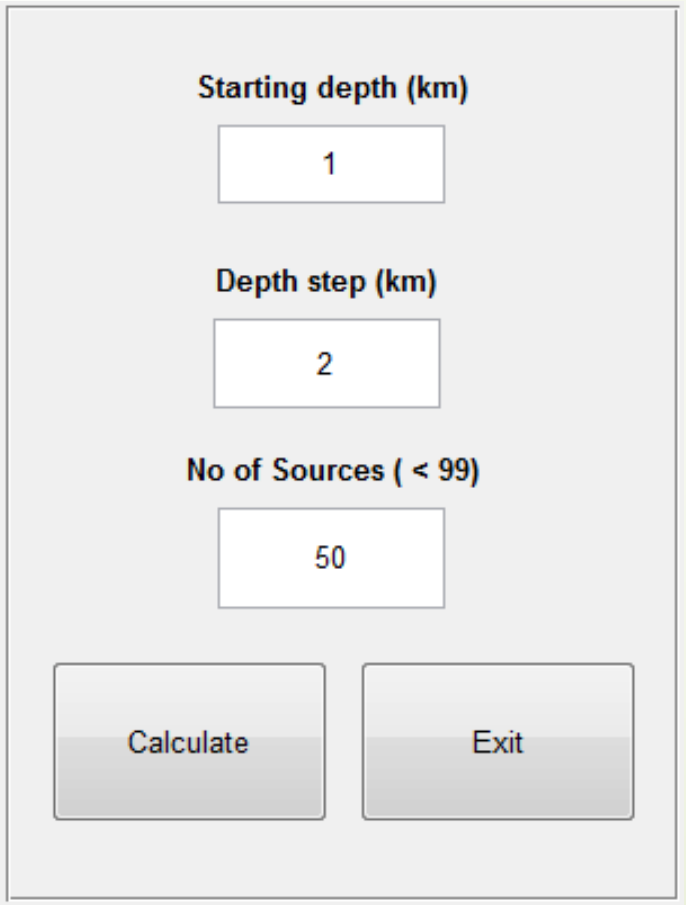
SNR for COVE Station



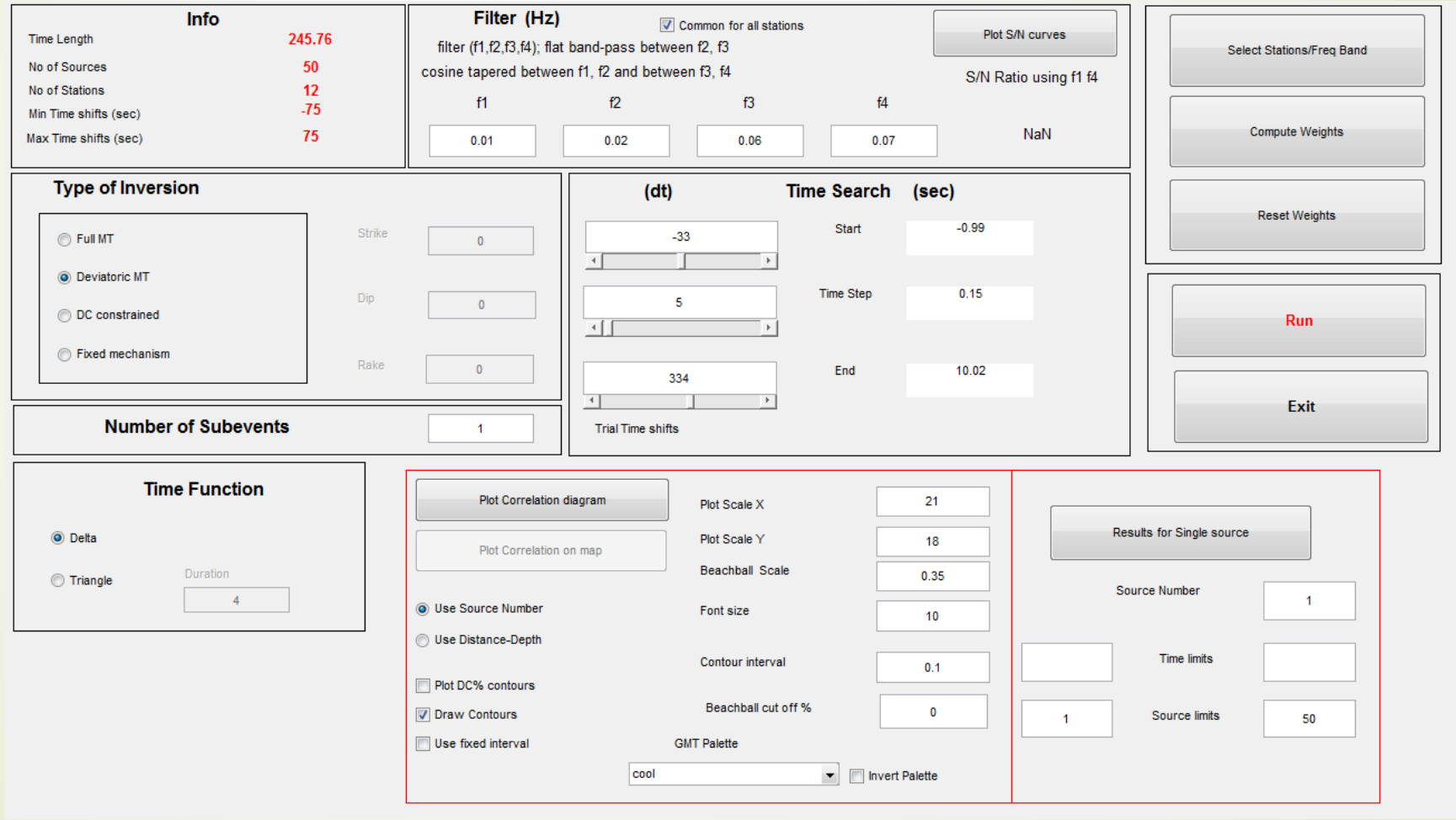
Velocity Model



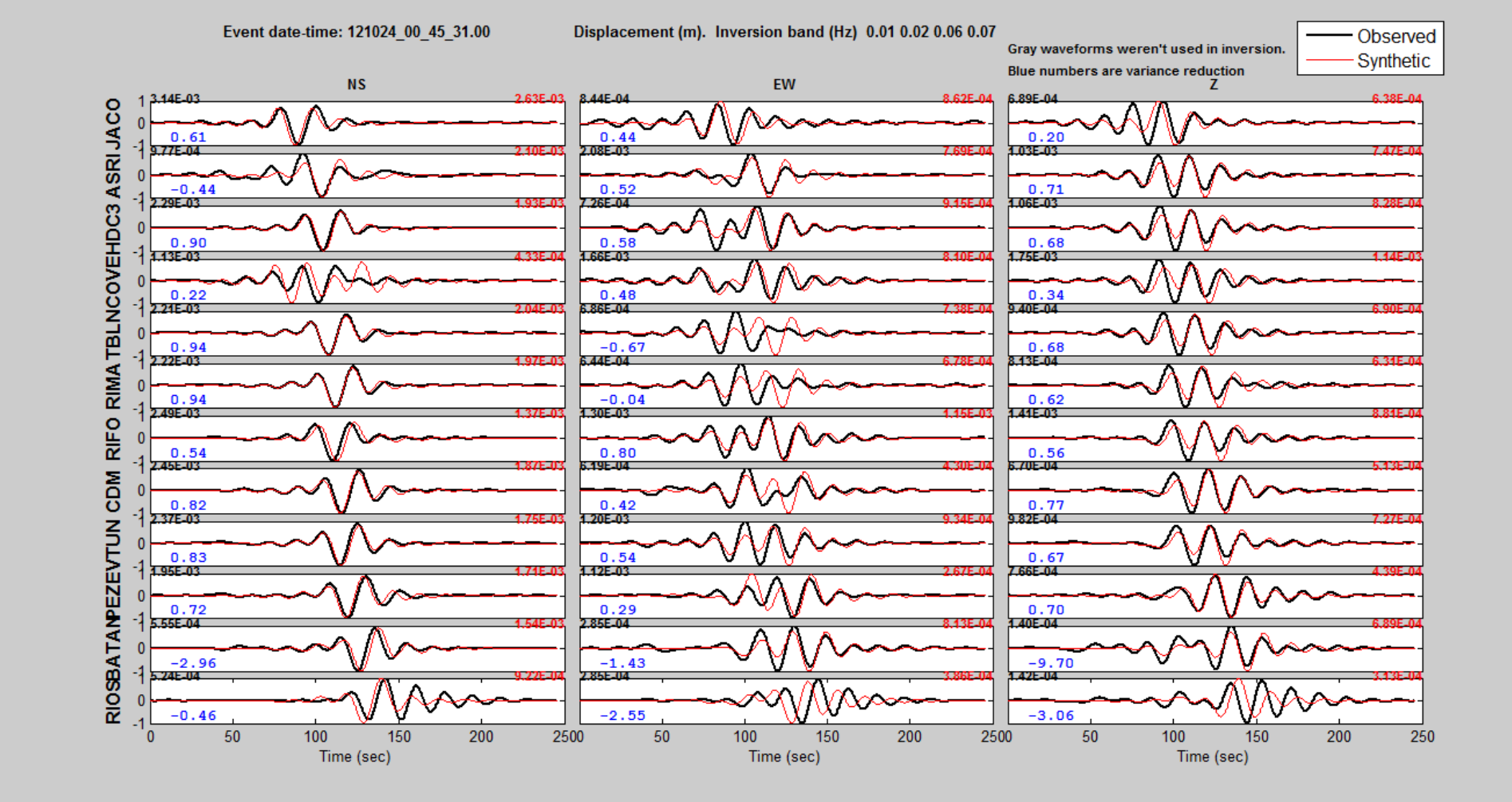
Seismic Source Definition



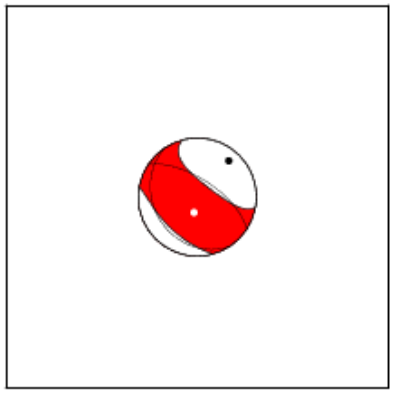
Inversion

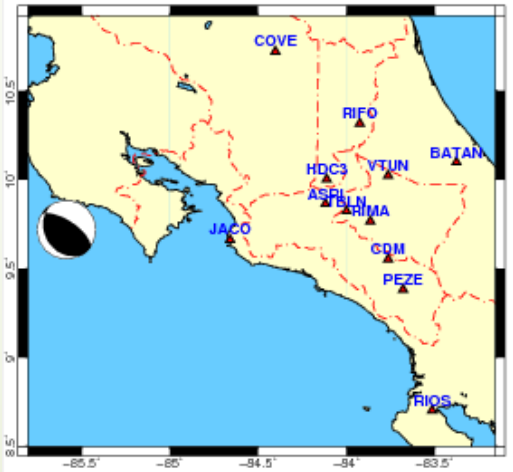

Info
Time Length
245.76
No of Sources
50
No of Stations
12
Min Time shifts (sec)
-75
Max Time shifts (sec)
75
Filter (Hz)
Common for all stations
filter (f1,f2,f3,f4); flat band-pass between f2, f3
cosine tapered between f1, f2 and between f3, f4
Plot S/N curves
S/N Ratio using f1 f4
f1
f2
f3
f4
0.01
0.02
0.06
0.07
NaN
Select Stations/Freq Band
Compute Weights
Reset Weights
Type of Inversion
Full MT
Deviatoric MT
DC constrained
Fixed mechanism
Strike
Dip
Rake
0
0
0
(dt)
Time Search
(sec)
-33
5
334
Trial Time shifts
Start
-0.99
Time Step
0.15
End
10.02
Run
Exit
Number of Subevents
1
Time Function
Delta
Triangle
Duration
4
Plot Correlation diagram
Plot Correlation on map
Use Source Number
Use Distance-Depth
Plot DC% contours
Draw Contours
Use fixed interval
Plot Scale X
21
Plot Scale Y
18
Beachball Scale
0.35
Font size
10
Contour interval
0.1
Beachball cut off %
0
GMT Palette
cool
Invert Palette
Results for Single source
Source Number
1
Time limits
Source limits
1
50

First Results



First Results





MOMENT TENSOR SOLUTION

HYPOCENTER LOCATION (UPSL)

Origin time 20121024 00:45:31.00
Lat 9.718 Lon -85.586 Depth 20

CENTROID

Trial source number : 8 (Fixed Epicenter inversion)
Centroid Lat (N) 9.718 Lon (E) -85.586
Centroid Depth (km) : 15
Centroid time : +6.12 (sec) relative to origin time

Moment (Nm) : 2.385e+18
Mw : 6.2
VOL% : 0
DC% : 35.9
CLVD% : 64.1

	SNR	CN	FMVAR	STVAR
Var.red.: (for stations used in inversion) : 0.6	NaN	2.7	44±13	0.32
Var.red. (for all stations) : 0.6				

Strike	Dip	Rake
148	27	112
Strike	Dip	Rake
303	65	79

P-axis	Azimuth	Plunge
	41	20
T-axis	Azimuth	Plunge
	193	68

Mrr	Mtt	Mpp
1.293	-0.788	-0.505
Mrt	Mrp	Mtp
-1.177	0.820	1.537

Exponent (Nm): 18

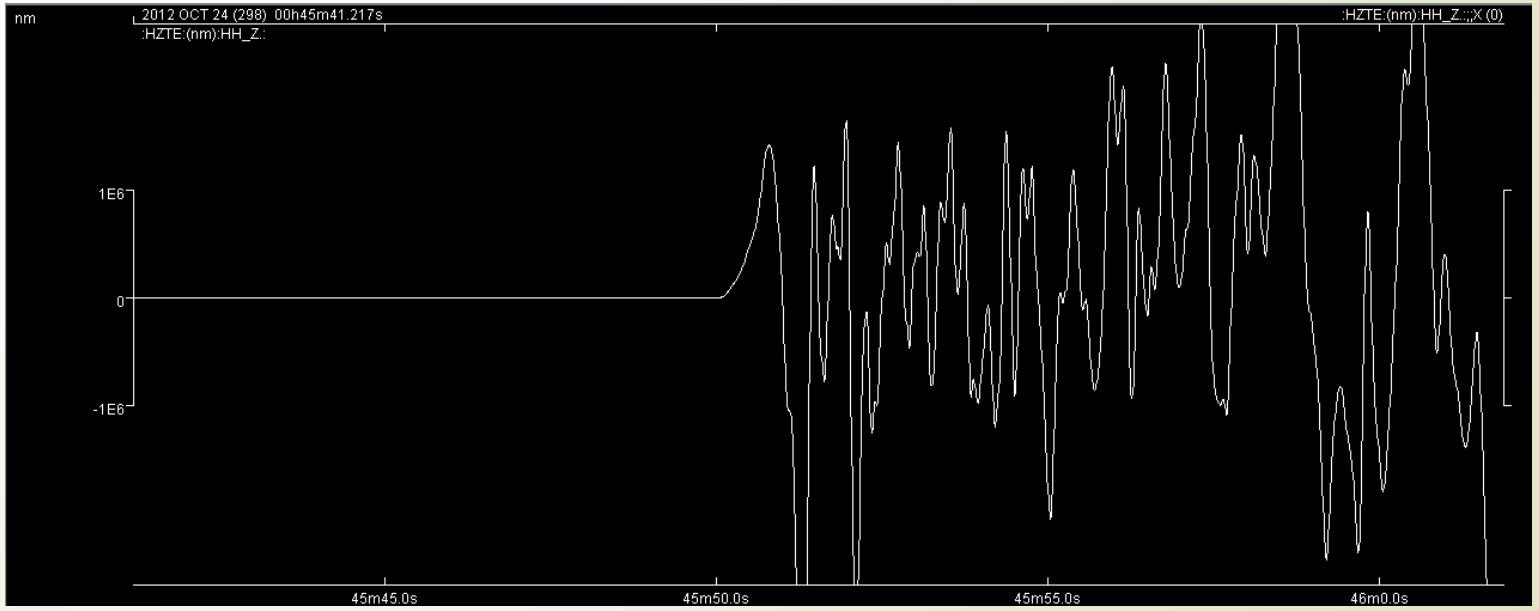
Frequency band used in inversion (Hz)
0.01 - 0.02 -- 0.06 - 0.07

Stations-Components Used-Distance

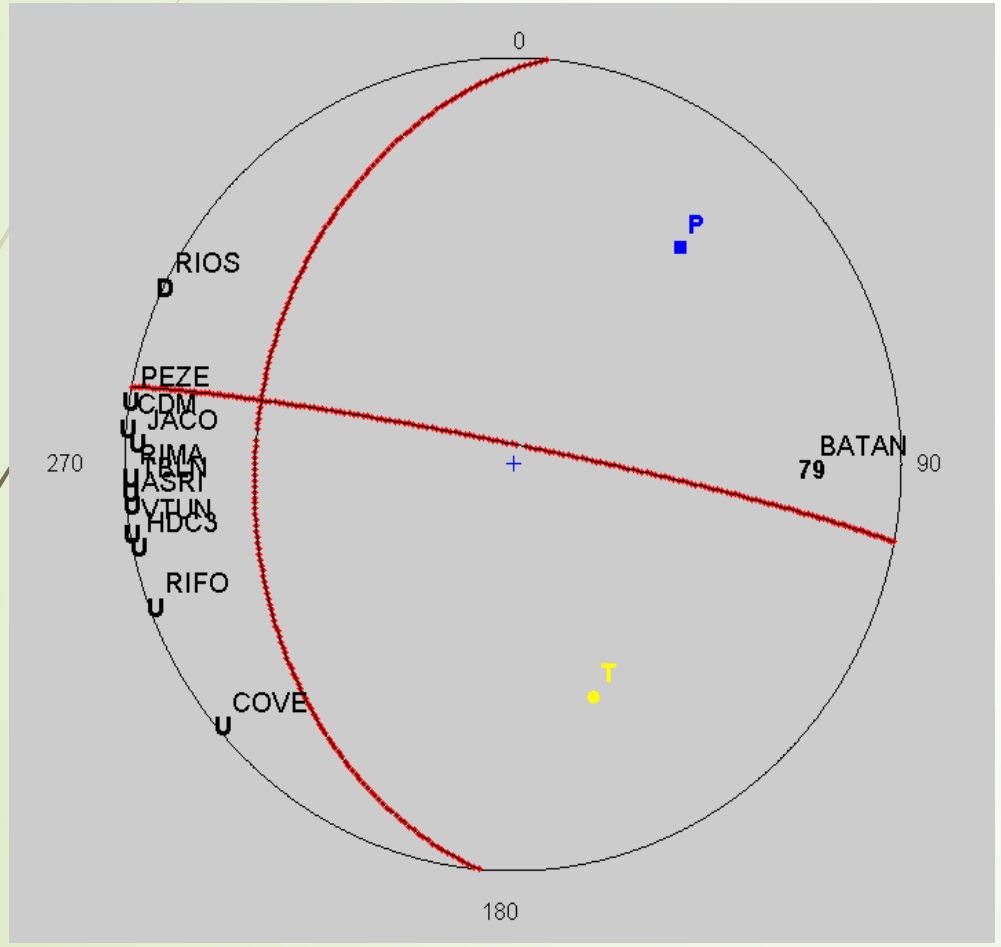
	NS	EW	Z	D (km)
JACO	+	+	+	102
ASRI	+	+	+	162
HDC3	+	+	+	165
COVE	+	+	+	171
TBLN	+	+	+	174
RIMA	+	+	+	189
RIFO	+	+	+	194
CDM	+	+	+	201
VTUN	+	+	+	203
PEZE	+	+	+	213
BATAN	+	+	+	246
RIOS	+	+	+	254

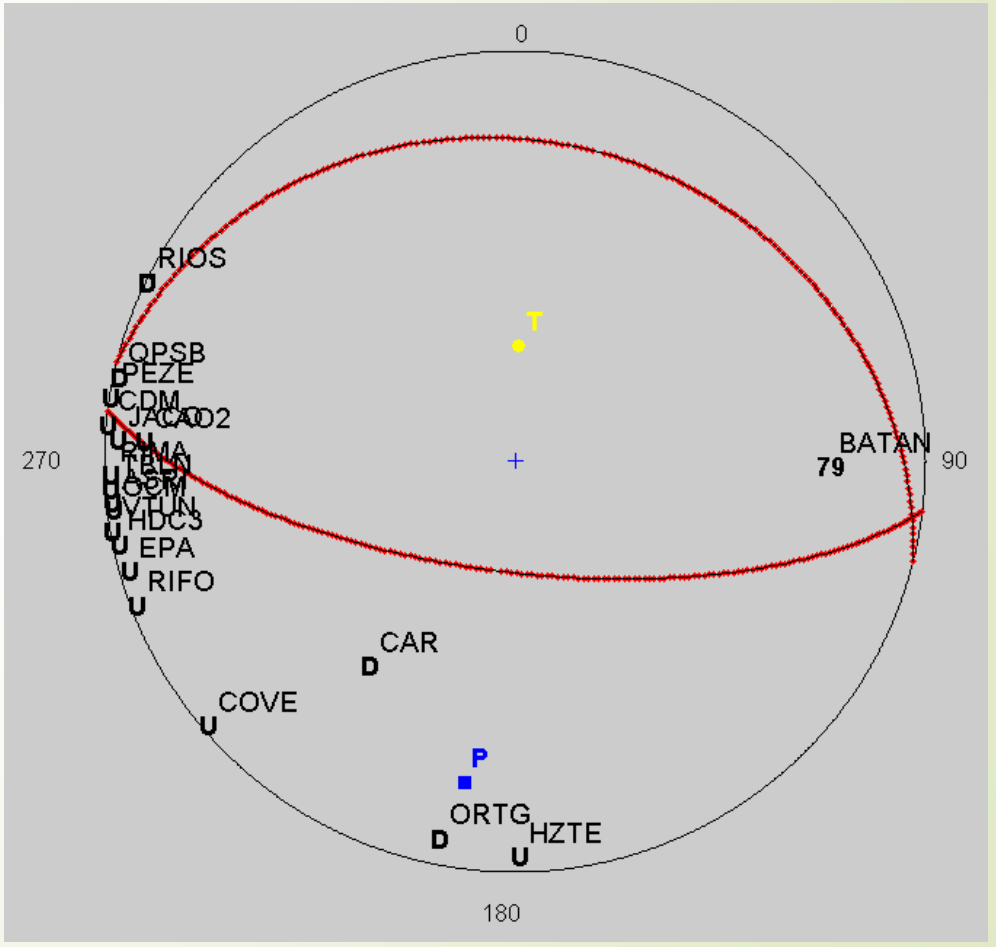
Polarities For All Stations

STAT	LAT	LONG	POL
OCM	9.8841	-83.9623	U
CDM	9.5537	-83.7637	U
HDC3	10.0021	-84.1114	U
PEZE	9.3826	-83.6775	U
RIFO	10.3173	-83.9227	U
COVE	10.7195	-84.4019	U
RIOS	8.7005	-83.5144	D
BATAN	10.0978	-83.3761	U
ASRI	9.8646	-84.1192	U
CAR	9.864	-85.4805	D
EPA	9.9863	-84.595	U
VTUN	10.0226	-83.7635	U
TBLN	9.8237	-83.9993	U
RIMA	9.7666	-83.8636	U
QPSB	9.3919	-84.1239	D
ORTG	10.3623	-85.459	D
JACO	9.6625	-84.6595	U
CAO2	9.688	-85.107	U
HZTE	10.7137	-85.5954	U

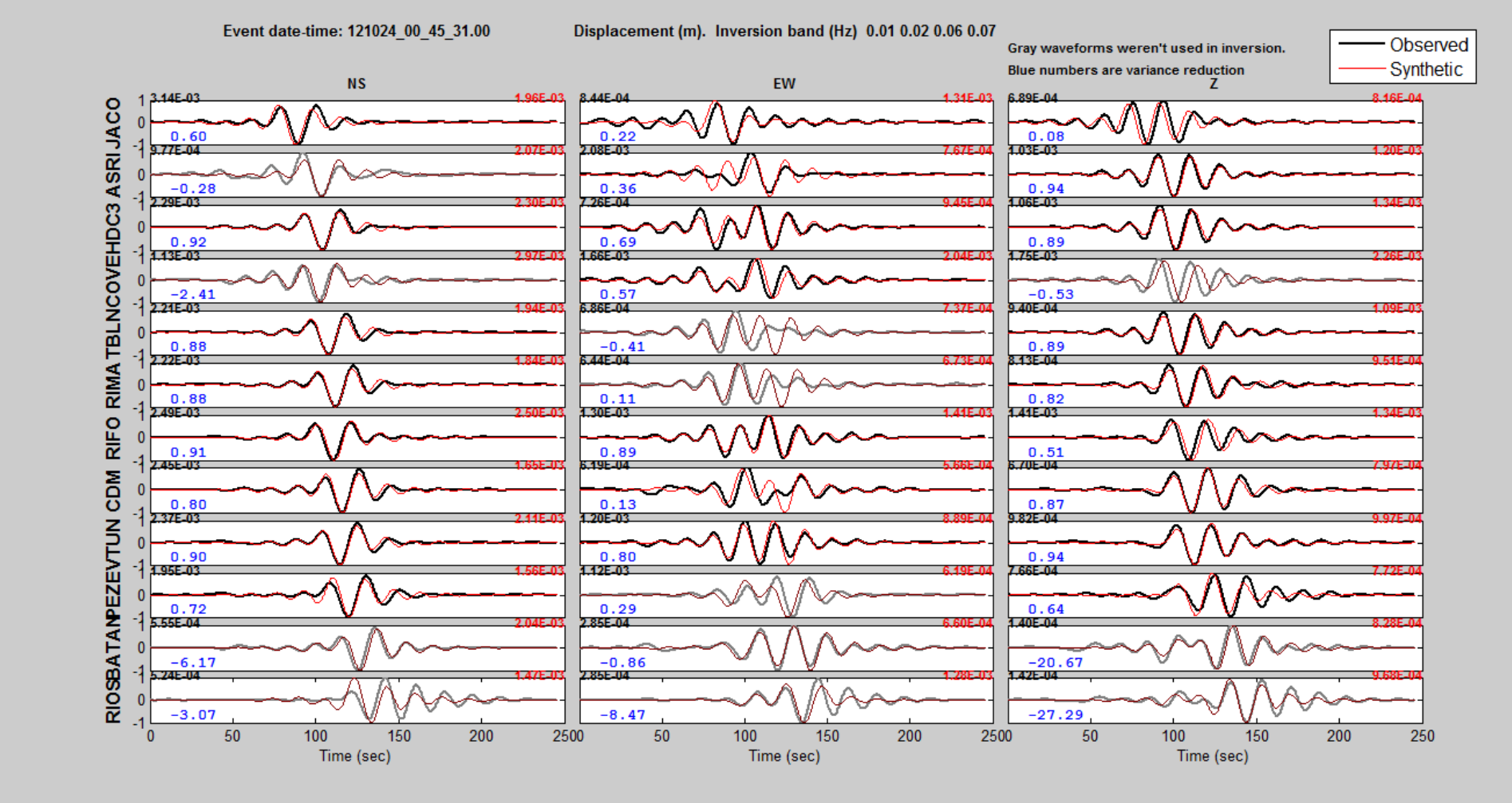


Plot Polarities





Second chance

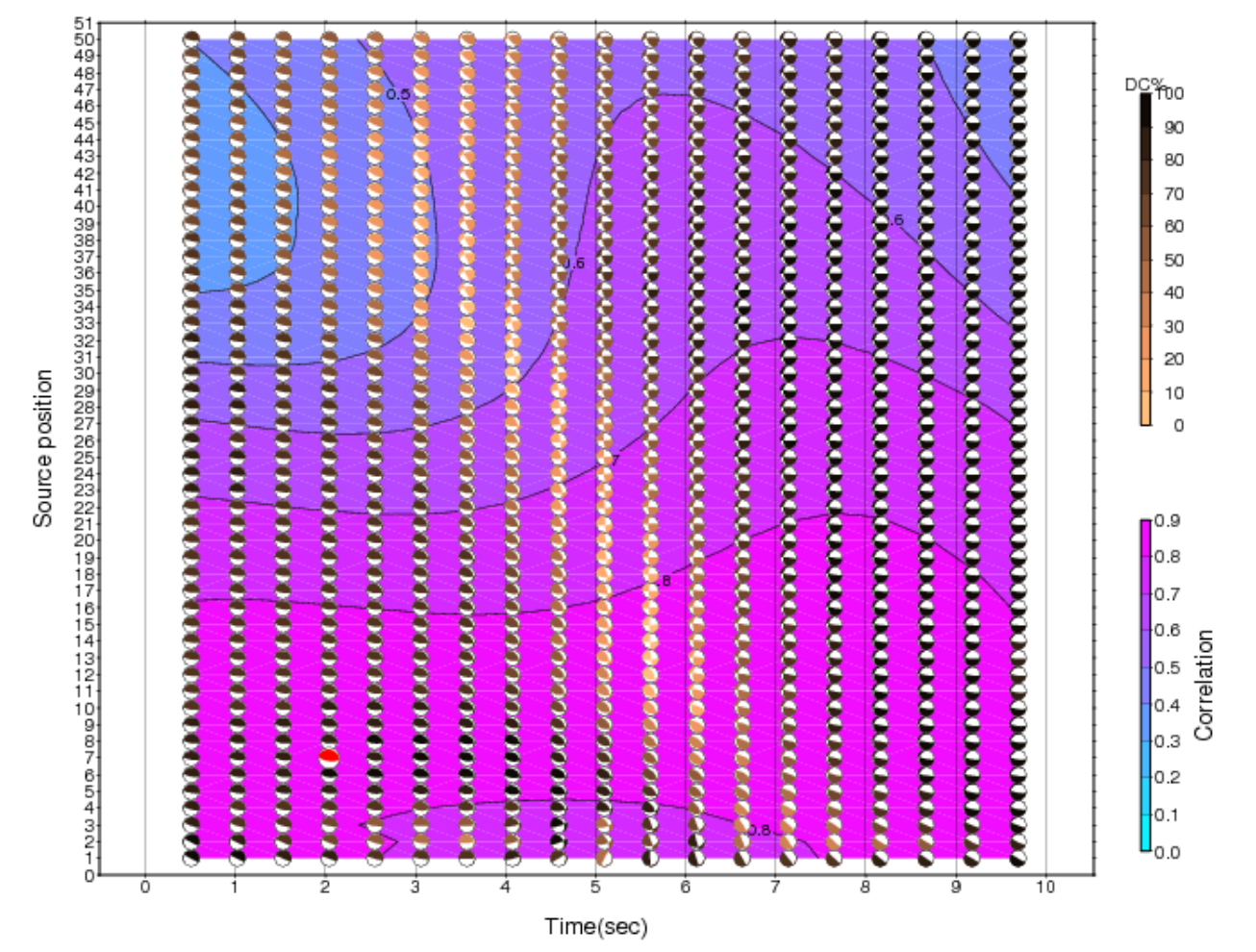


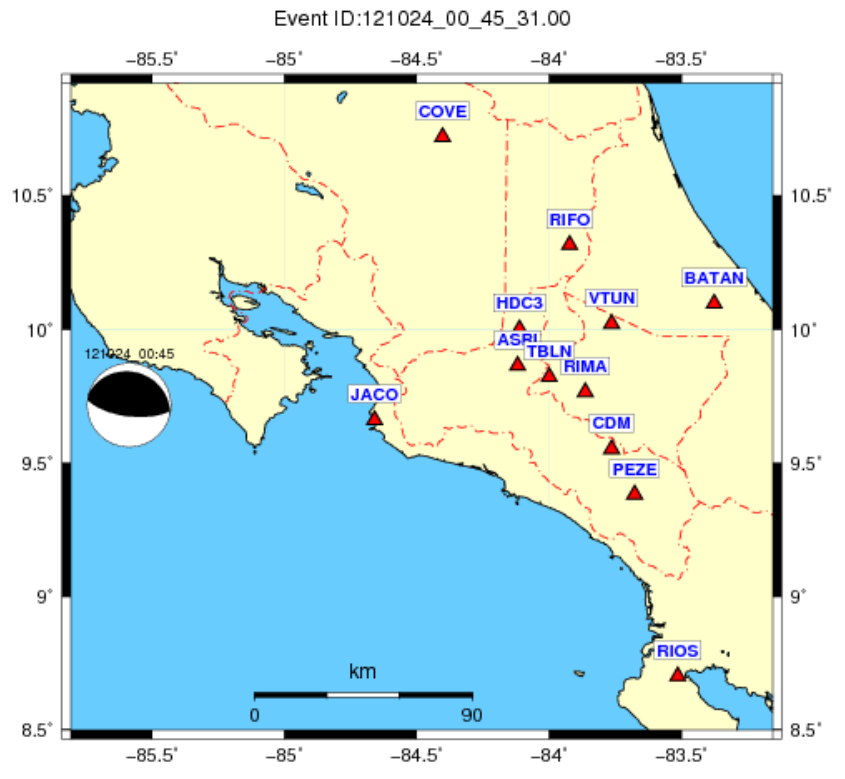
Station Selection

Stations			Components		f1	f2	f3	f4
JACO	☑ Use Station	☑ Use NS	☑ Use EW	☑ Use Z	0.01	0.02	0.06	0.07
ASRI	☑ Use Station	☐ Use NS	☑ Use EW	☑ Use Z	0.01	0.02	0.06	0.07
HDC3	☑ Use Station	☑ Use NS	☑ Use EW	☑ Use Z	0.01	0.02	0.06	0.07
COVE	☑ Use Station	☐ Use NS	☑ Use EW	☐ Use Z	0.01	0.02	0.06	0.07
TBLN	☑ Use Station	☑ Use NS	☐ Use EW	☑ Use Z	0.01	0.02	0.06	0.07
RIMA	☑ Use Station	☑ Use NS	☐ Use EW	☑ Use Z	0.01	0.02	0.06	0.07
RIFO	☑ Use Station	☑ Use NS	☑ Use EW	☑ Use Z	0.01	0.02	0.06	0.07
CDM	☑ Use Station	☑ Use NS	☑ Use EW	☑ Use Z	0.01	0.02	0.06	0.07
VTUN	☑ Use Station	☑ Use NS	☑ Use EW	☑ Use Z	0.01	0.02	0.06	0.07
PEZE	☑ Use Station	☑ Use NS	☐ Use EW	☑ Use Z	0.01	0.02	0.06	0.07
BATAN	☐ Use Station	☐ Use NS	☐ Use EW	☐ Use Z	0.01	0.02	0.06	0.07
RIOS	☐ Use Station	☐ Use NS	☐ Use EW	☐ Use Z	0.01	0.02	0.06	0.07

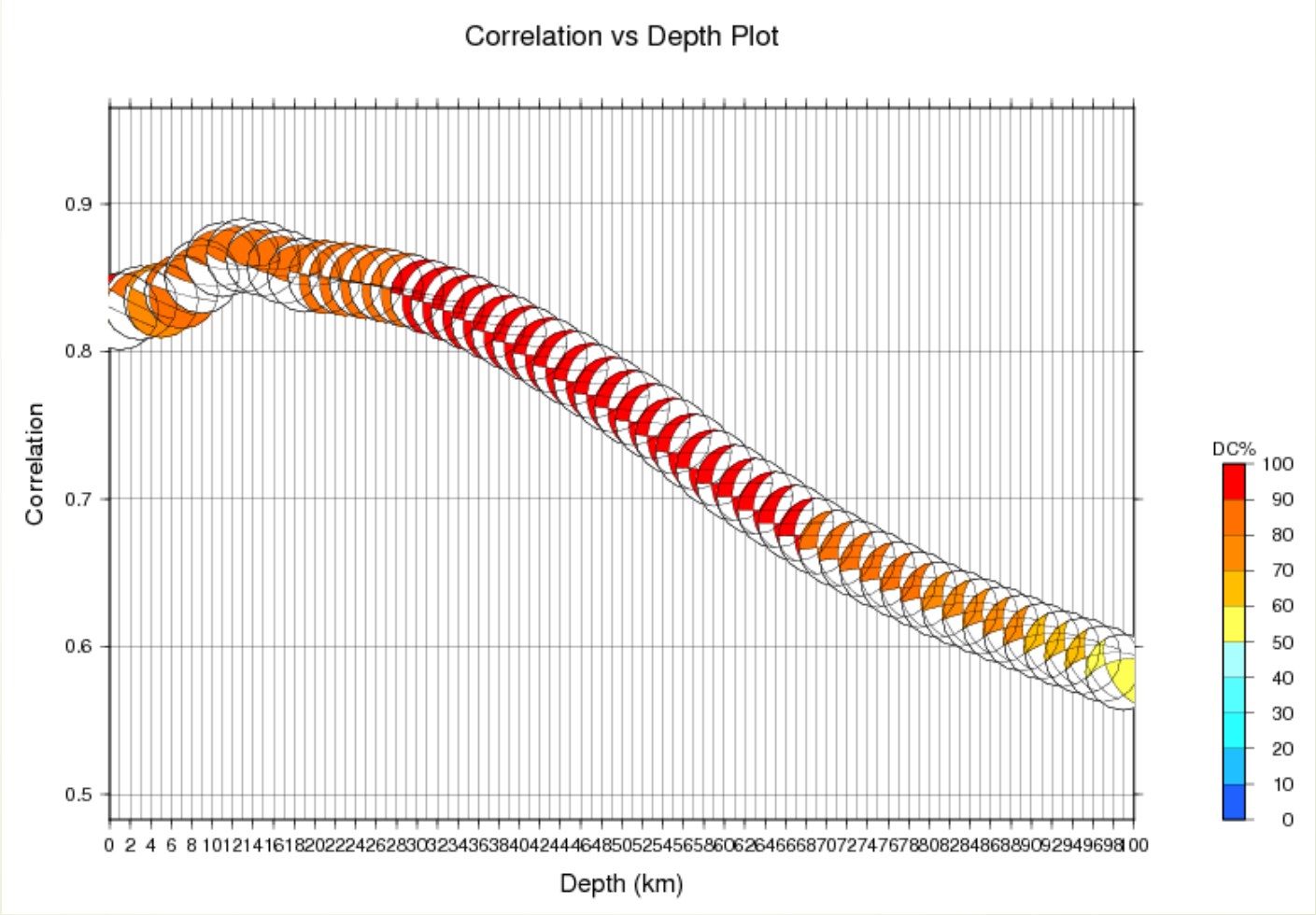
Exit | Update and Exit

Correlation Plot

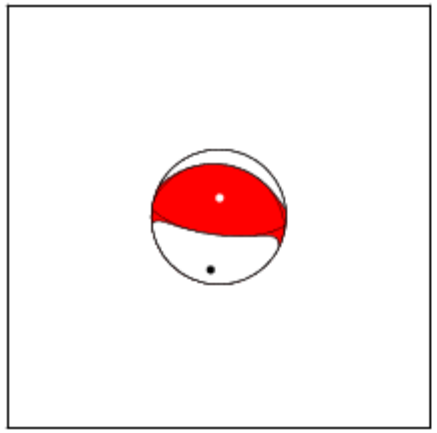


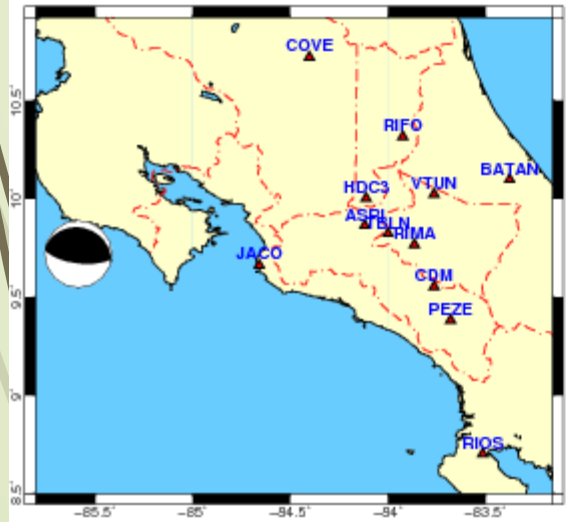


Correlation vs Depth



Focal Mechanisms





MOMENT TENSOR SOLUTION

HYPOCENTER LOCATION (UPSL)

Origin time 20121024 00:45:31.00
Lat 9.718 Lon -85.586 Depth 20

CENTROID

Trial source number : 7 (Fixed Epicenter inversion)
Centroid Lat (N)9.718 Lon (E)-85.586
Centroid Depth (km) : 13
Centroid time : +2.04 (sec) relative to origin time

Moment (Nm) : 4.902e+18
Mw : 6.4
VOL% :0
DC% :87.3
CLVD% :12.7

	SNR	CN	FMVAR	STVAR
Var.red.:(for stations used in inversion):0.59	NaN	3.2	48±32	0.35
Var.red.(for all stations) :0.51				

Strike	Dip	Rake
97	68	87
Strike	Dip	Rake
284	23	97

P-axis	Azimuth	Plunge
	189	22
T-axis	Azimuth	Plunge
	2	67

Mrr	Mtt	Mpp
3.296	-3.507	0.212
Mrt	Mrp	Mtp
3.443	-0.334	0.681

Exponent (Nm): 18

Frequency band used in inversion (Hz)
0.01 - 0.02 -- 0.06 - 0.07

Stations-Components Used-Distance

	NS	EW	Z	D(km)
JACO	+	+	+	102
ASRI	-	+	+	162
HDC3	+	+	+	165
COVE	-	+	-	171
TBLN	+	-	+	174
RIMA	+	-	+	189
RIFO	+	+	+	194
CDM	+	+	+	201
VTUN	+	+	+	203
PEZE	+	-	+	213
BATAN	-	-	-	246
RIOS	-	-	-	254

USGS Centroid Moment Solution

COSTA RICA

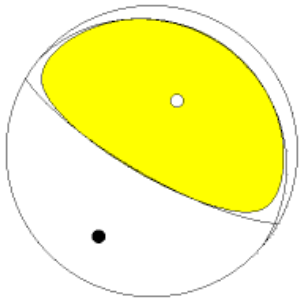
12/10/24 00:45:34.21

Epicenter: 10.121 -85.314
MW 6.4

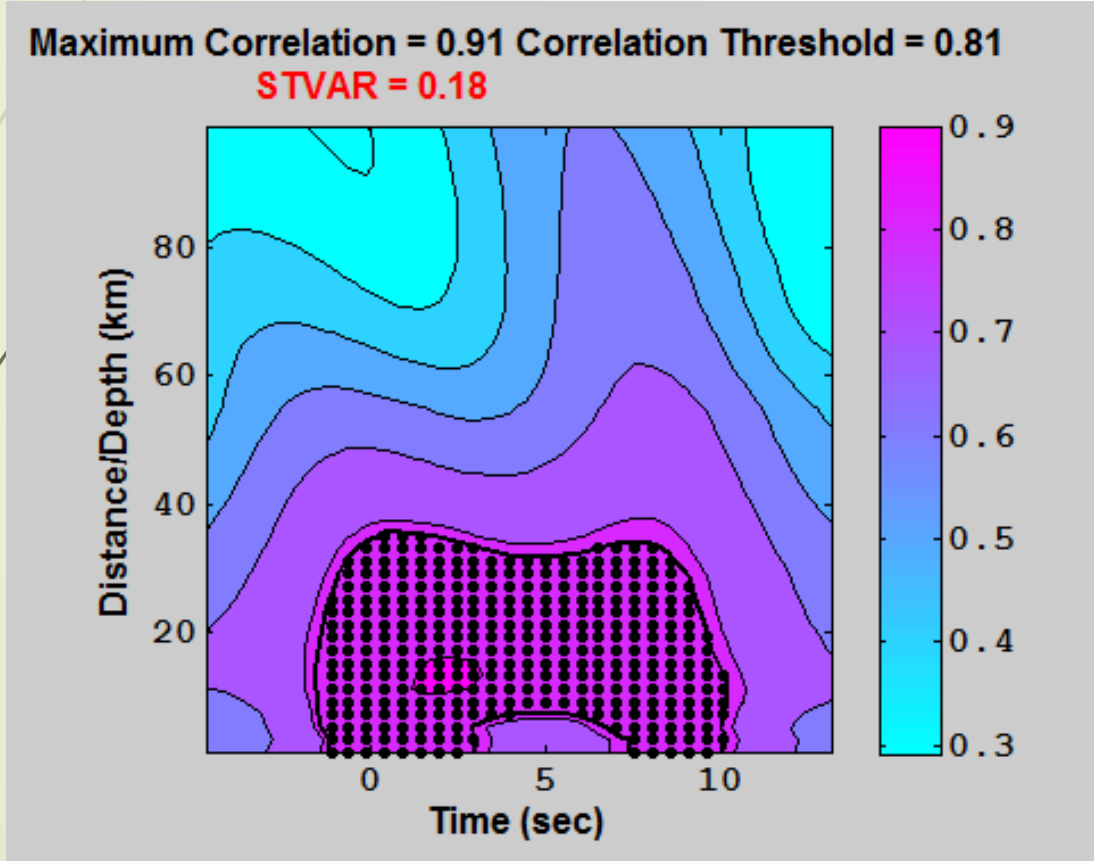
USGS CENTROID MOMENT TENSOR
12/10/24 00:45:48.70
Centroid: 10.181 -84.976
Depth 10 No. of sta:102
Moment Tensor; Scale 10**18 Nm
Mrr= 2.77 Mtt=-1.74
Mpp=-1.02 Mrt= 4.59
Mrp=-2.55 Mtp= 1.09
Principal axes:

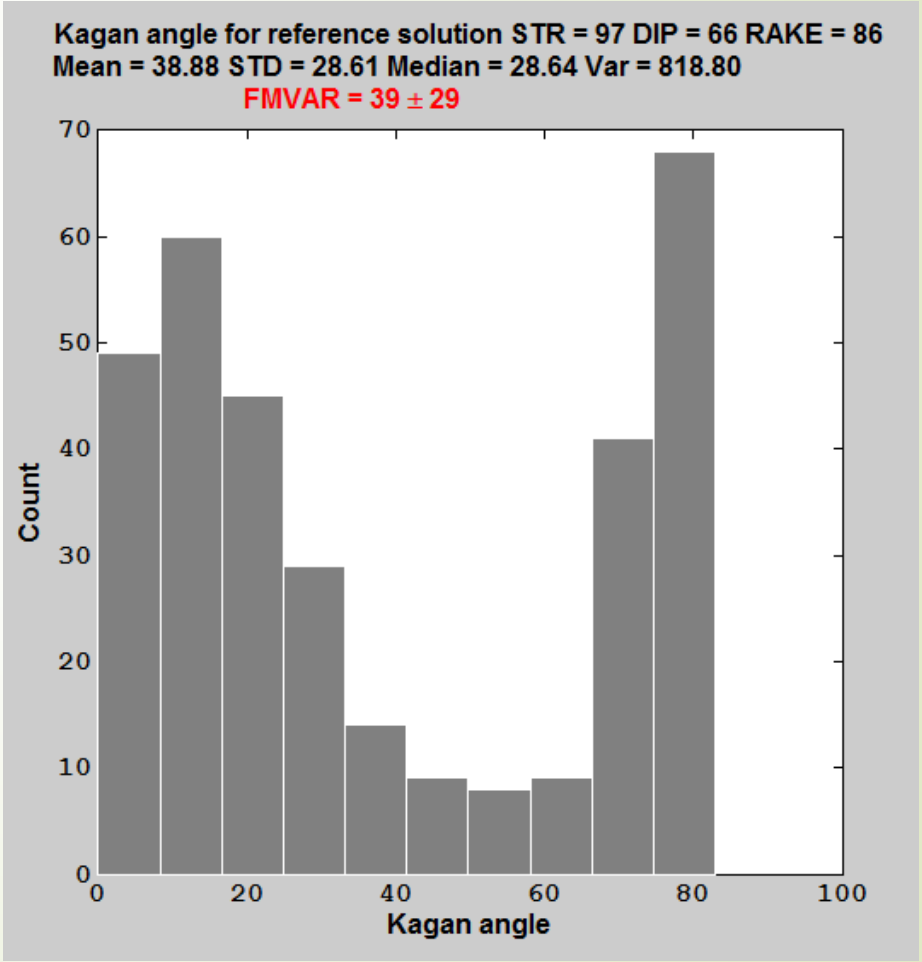
	Val=	Plg=	Azm=
T	6.01	58	27
N	-0.26	2	120
P	-5.76	32	212

Best Double Couple:Mo=5.9*10**18
NP1:Strike=120 Dip=77 Slip= 88
NP2: 310 14 100



Kagan


Maximum Correlation = 0.91 Correlation Threshold = 0.81
STVAR = 0.18
Distance/Depth (km)
80
60
40
20
0
5
10
Time (sec)
0.9
0.8
0.7
0.6
0.5
0.4
0.3


Kagan angle for reference solution STR = 97 DIP = 66 RAKE = 86
Mean = 38.88 STD = 28.61 Median = 28.64 Var = 818.80
FMVAR = 39 ± 29
Count
70
60
50
40
30
20
10
0
0
20
40
60
80
100
Kagan angle