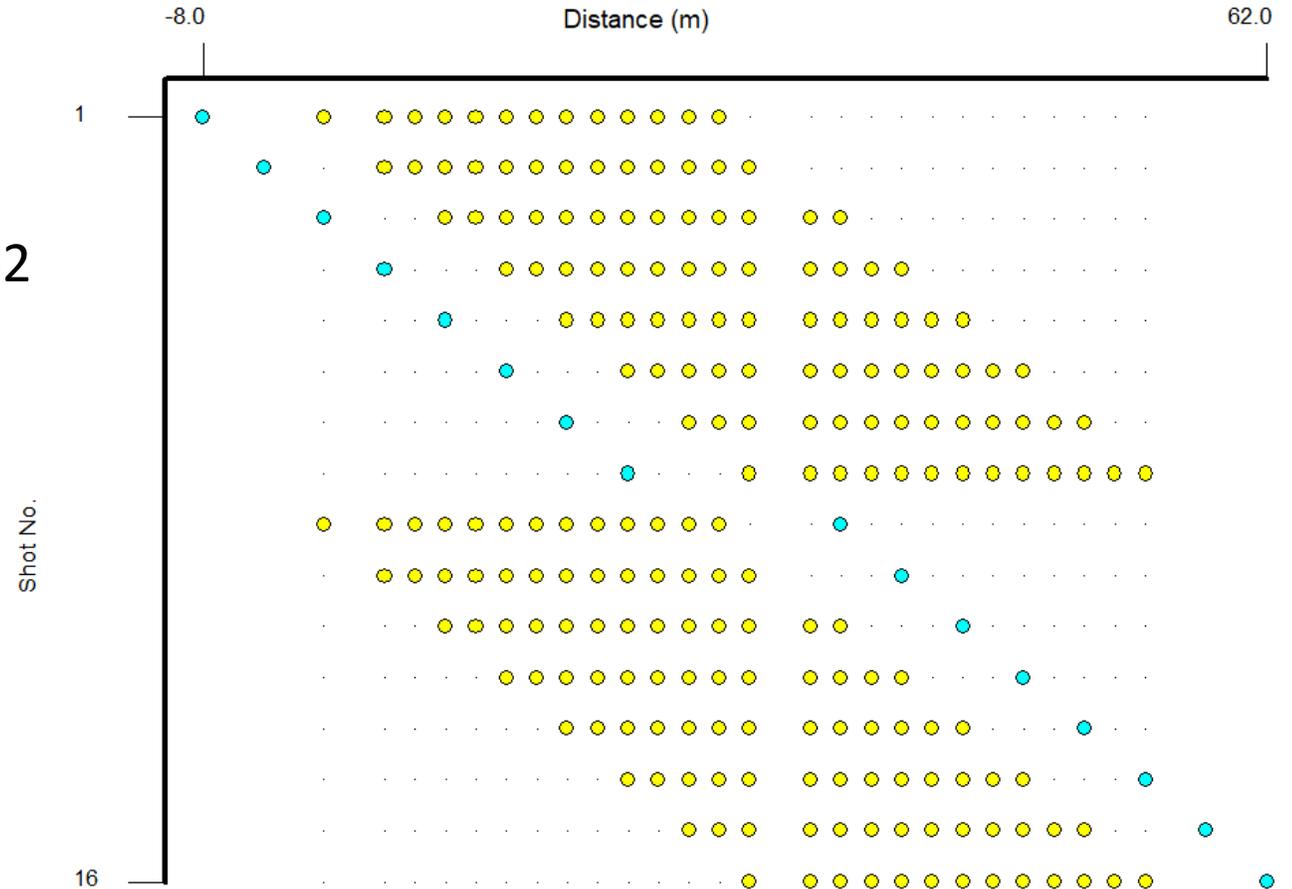


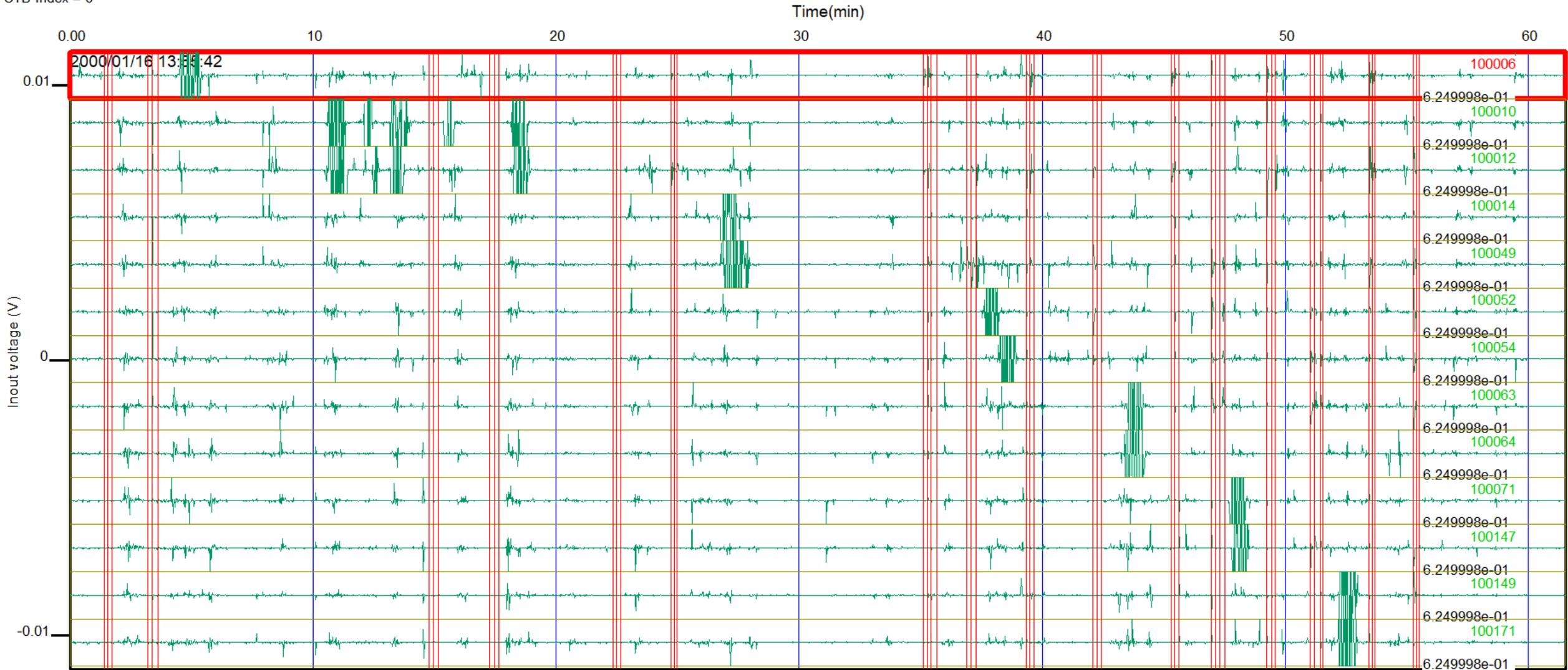
2D MASW using Atom

- Used 13 Atoms
 - Shot several times both ends
1. Detect events
 2. Cut out shot gathers and save them as SEG2 files
 3. Stack shot gathers
 4. Setup geometry
 5. Apply CMPC-CC processing



Detected events

CTB Index = 0



Set up source index

Assign the same index to files to be stacked.

File list

Index	Edit	ID	Source (m)	1st receiver (m)	Receiver int. (m)	# of aux.	Source index	
0	<input type="checkbox"/>	0	0	0	2	0	0	2000/1/16 13:57:6.792
1	<input type="checkbox"/>	0	0	0	2	0	1	2000/1/16 13:57:15.196
2	<input type="checkbox"/>	0	0	0	2	0	2	2000/1/16 13:57:25.700
3	<input type="checkbox"/>	0	0	0	2	0	3	2000/1/16 13:58:54.232
4	<input type="checkbox"/>	0	0	0	2	0	4	2000/1/16 13:59:5.716
5	<input type="checkbox"/>	0	0	0	2	0	5	2000/1/16 13:59:20.152
6	<input type="checkbox"/>	0	0	0	2	0	6	2000/1/16 14:10:28.108
7	<input type="checkbox"/>	0	0	0	2	0	7	2000/1/16 14:10:39.292
8	<input type="checkbox"/>	0	0	0	2	0	8	2000/1/16 14:10:52.188
9	<input type="checkbox"/>	0	0	0	2	0	9	2000/1/16 14:12:57.660

Apply source coordinates from file header Active data
 Apply receiver coordinates from file header Passive data

OK
Cancel
Next
Back
Set up
Set # of aux.
Delete
Export
Import

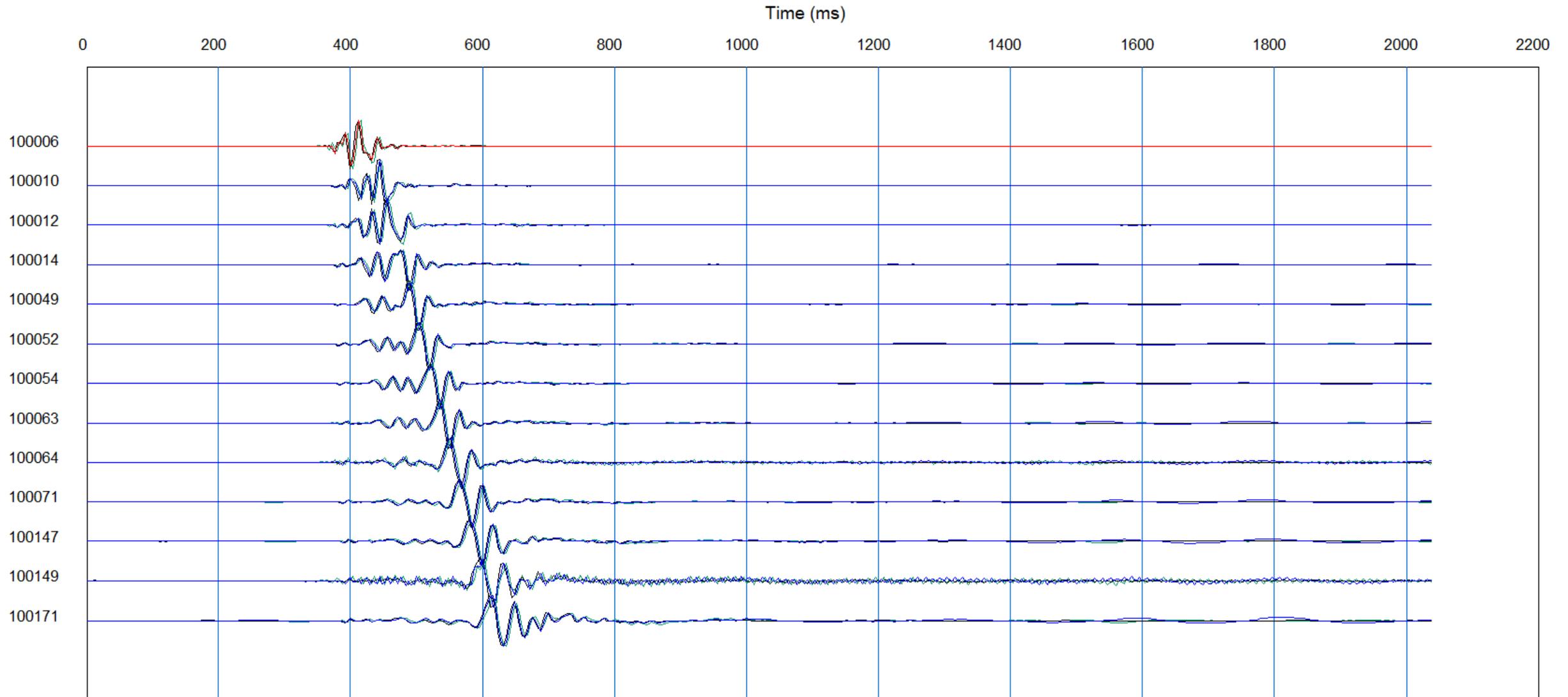
Number of files
51

Source index

0
0
0
1
1
1
1
2
2
2
2
3

1st shot location
2nd shot location

Files to be stacked

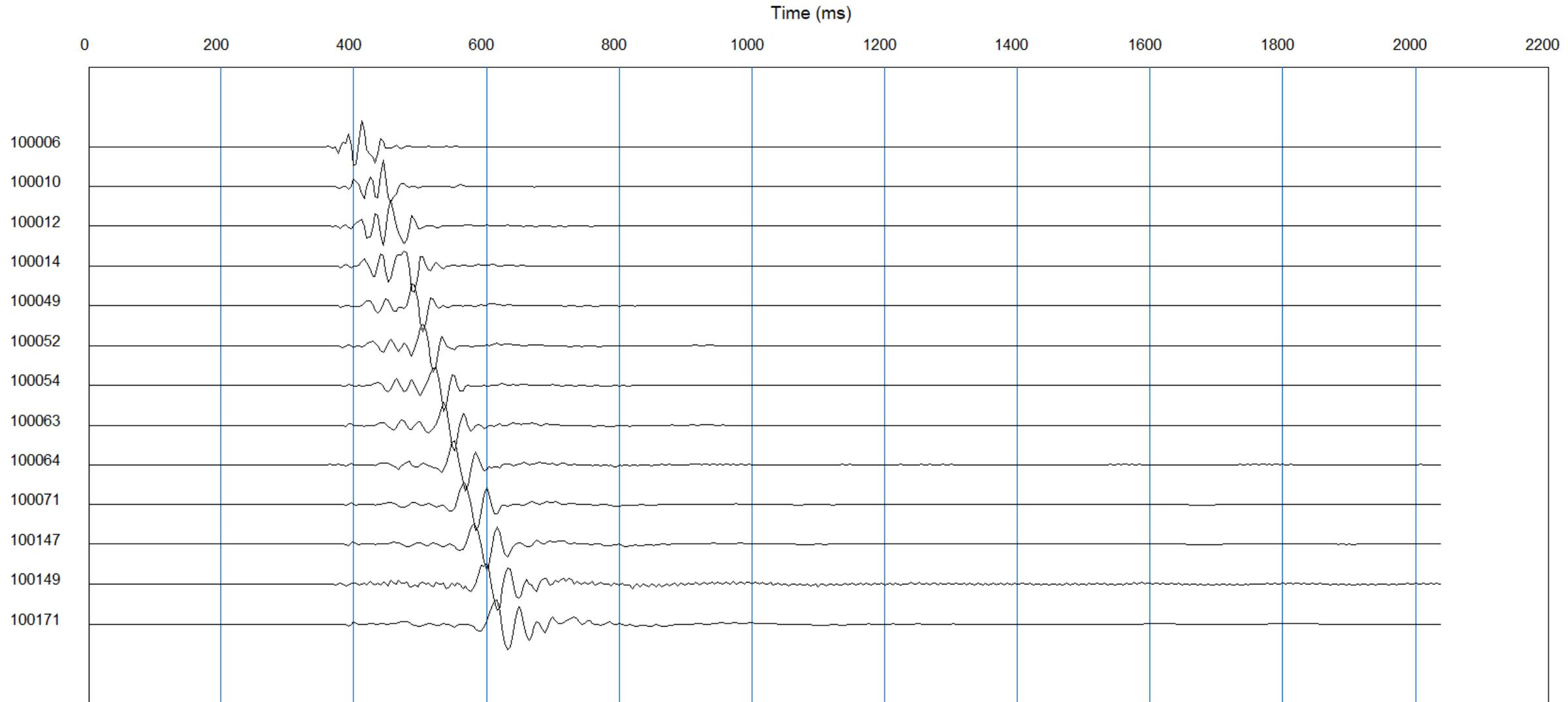


Stack files for each shot locations

The screenshot shows the Pickwin software interface. The title bar reads "EventList bundled.xml - Pickwin". The menu bar includes "File (F)", "Edit/Display (E)", "View (V)", "Pick first arrivals (P)", "Downhole seismic analysis (D)", "Surface wave analysis (S)", "Processing (A)", "Option (O)", and "Help". The "File" menu is open, listing options such as "Open waveform (SEG2) file(O)...", "Save waveform (SEG2) file(S)...", "Open SEG2 file (SmartSeis)", "Open McSeis-3 file", "Open OYO 160MX (SEG1) file", "Open synthetic waveform (.8hd) file", "Open pick file", "Save pick file", "Print window display (P)...", "Print preview (V)", "Page setup (R)...", "Group (File list) (G)", "Options", and "Exit (X)". The "Group (File list) (G)" menu item is expanded, showing a list of files: "1 C:\Koichi\...\stacked_0001.sg2", "2 C:\Koichi\...\stacked_0000.sg2", "3 stacked_0000_rec_dist.sg2", and "4 CTB_5_event_0000.sg2". The "Vertical stack" option is highlighted in blue. The main window displays a seismic waveform plot with "Time (ms)" on the x-axis, ranging from 400 to 1200. The plot shows multiple stacked traces in various colors (red, blue, green, yellow, purple, etc.). A toolbar with various icons is visible above the plot.

A dialog box titled "Pickwin" is displayed. It contains a question mark icon and the text: "16 stacked files were saved. Do you want to create a new file list for stacked files?". At the bottom of the dialog, there are two buttons: "Yes" and "No".

Stacked shot gather



Prepare geometry file

Shot index	Atom ID	Receiver dist. (m)									
0	100006	0	0	2	100006	28	0	14	100006	28	0
0	100010	4	0	2	100010	4	0	14	100010	32	0
0	100012	6	0	2	100012	6	0	14	100012	34	0
0	100014	8	0	2	100014	8	0	14	100014	36	0
0	100049	10	0	2	100049	10	0	14	100049	38	0
0	100052	12	0	2	100052	12	0	14	100052	40	0
0	100054	14	0	2	100054	14	0	14	100054	42	0
0	100063	16	0	2	100063	16	0	14	100063	44	0
0	100064	18	0	2	100064	18	0	14	100064	46	0
0	100071	20	0	2	100071	20	0	14	100071	48	0
0	100147	22	0	2	100147	22	0	14	100147	50	0
0	100149	24	0	2	100149	24	0	14	100149	52	0
0	100171	26	0	2	100171	26	0	14	100171	54	0
1	100006	0	0	3	100006	28	0	15	100006	28	0
1	100010	4	0	3	100010	4	0	15	100010	32	0
1	100012	6	0	3	100012	6	0	15	100012	34	0
1	100014	8	0	3	100014	8	0	15	100014	36	0
1	100049	10	0	3	100049	10	0	15	100049	38	0
1	100052	12	0	3	100052	12	0	15	100052	40	0
1	100054	14	0	3	100054	14	0	15	100054	42	0
1	100063	16	0	3	100063	16	0	15	100063	44	0
1	100064	18	0	3	100064	18	0	15	100064	46	0
1	100071	20	0	3	100071	20	0	15	100071	48	0
1	100147	22	0	3	100147	22	0	15	100147	50	0
1	100149	24	0	3	100149	24	0	15	100149	52	0
1	100171	26	0	3	100171	26	0	15	100171	54	0

.....

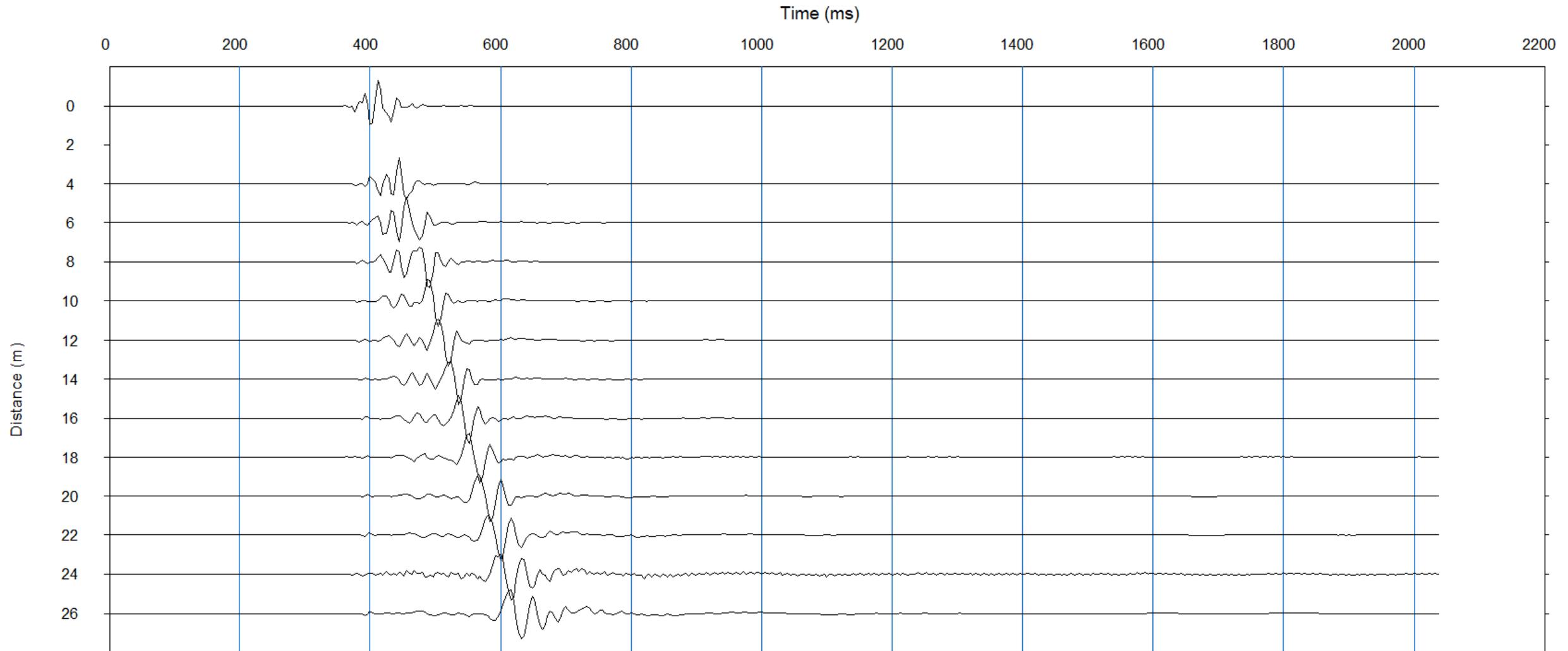
Set up receiver geometry

The screenshot shows a software window titled "EventList bundled.xml - Pickwin". The menu bar includes "File (F)", "Edit/Display (E)", "View (V)", "Pick first arrivals (P)", "Downhole seismic analysis (D)", "Surface wave analysis (S)", "Processing (A)", "Option (O)", and "Hel". The "File" menu is open, listing options such as "Open waveform (SEG2) file(O)...", "Save waveform (SEG2) file(S)...", "Open SEG2 file (SmartSeis)", "Open McSeis-3 file", "Open OYO 160MX (SEG1) file", "Open synthetic waveform (.8hd) file", "Open pick file", "Save pick file", "Print window display (P)...", "Print preview (V)", "Page setup (R)...", "Group (File list) (G)", "Options", and "Exit (X)". A sub-menu for "Group (File list) (G)" is also open, showing options like "Make file list", "Open file list", "Set up geometry", and "Edit".

The main window displays a waveform plot with a time axis labeled "Time (ms)" ranging from 400 to 1200. The plot shows three stacked seismic traces. The top trace has a prominent peak around 450 ms. The middle trace has a peak around 500 ms. The bottom trace has a peak around 550 ms. The plot area is overlaid with a grid.

At the bottom of the window, there is a status bar with the text "100064" and a "Vertical stack" button. A blue button labeled "Import CTB receiver position file" is visible at the bottom right of the plot area.

Stacked shot gather with receiver locations



C:\Koichi\Request\Robin Glas(2021.12.10)\stacked_0000_rec_dist.sg2

CTB0_event_0000.sg2-CTB0_event_0050.sg2

Set up shot locations

Select “File”, “Group”, “Show file list” or press “Ctrl+G” to edit source locations.

Set up shot locations

File list

Index	Edit	ID	Source (m)	1st receiver (m)	Receiver int. (m)	# of aux.	Source index	
0	<input type="checkbox"/>	0	-8	0	0	0	0	2021/12/11 15:19:40.000
1	<input type="checkbox"/>	1	34	0	0	0	1	2021/12/11 15:19:40.000
2	<input type="checkbox"/>	2	-4	0	0	0	2	2021/12/11 15:19:40.000
3	<input type="checkbox"/>	3	38	0	0	0	3	2021/12/11 15:19:40.000
4	<input type="checkbox"/>	4	0	0	0	0	4	2021/12/11 15:19:40.000
5	<input type="checkbox"/>	5	42	0	0	0	5	2021/12/11 15:19:40.000
6	<input type="checkbox"/>	6	4	0	0	0	6	2021/12/11 15:19:40.000
7	<input type="checkbox"/>	7	46	0	0	0	7	2021/12/11 15:19:40.000
8	<input type="checkbox"/>	8	8	0	0	0	8	2021/12/11 15:19:40.000
9	<input type="checkbox"/>	9	50	0	0	0	9	2021/12/11 15:19:40.000

Apply source coordinates from file header Active data
 Apply receiver coordinates from file header Passive data

Number of files: 16

Buttons: OK, Cancel, Next, Back, Set up, Set # of aux., Delete, Export, Import

To scroll shots

Uncheck “Apply source coordinates from file header”

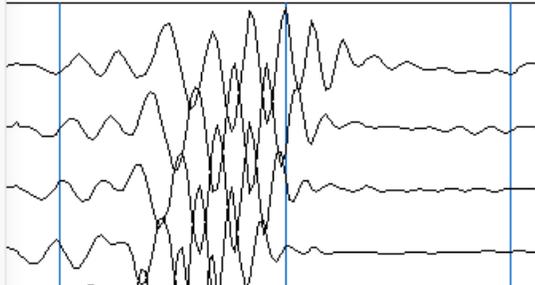
Set up geometry

EventList geometry assigned.xml - Pickwin

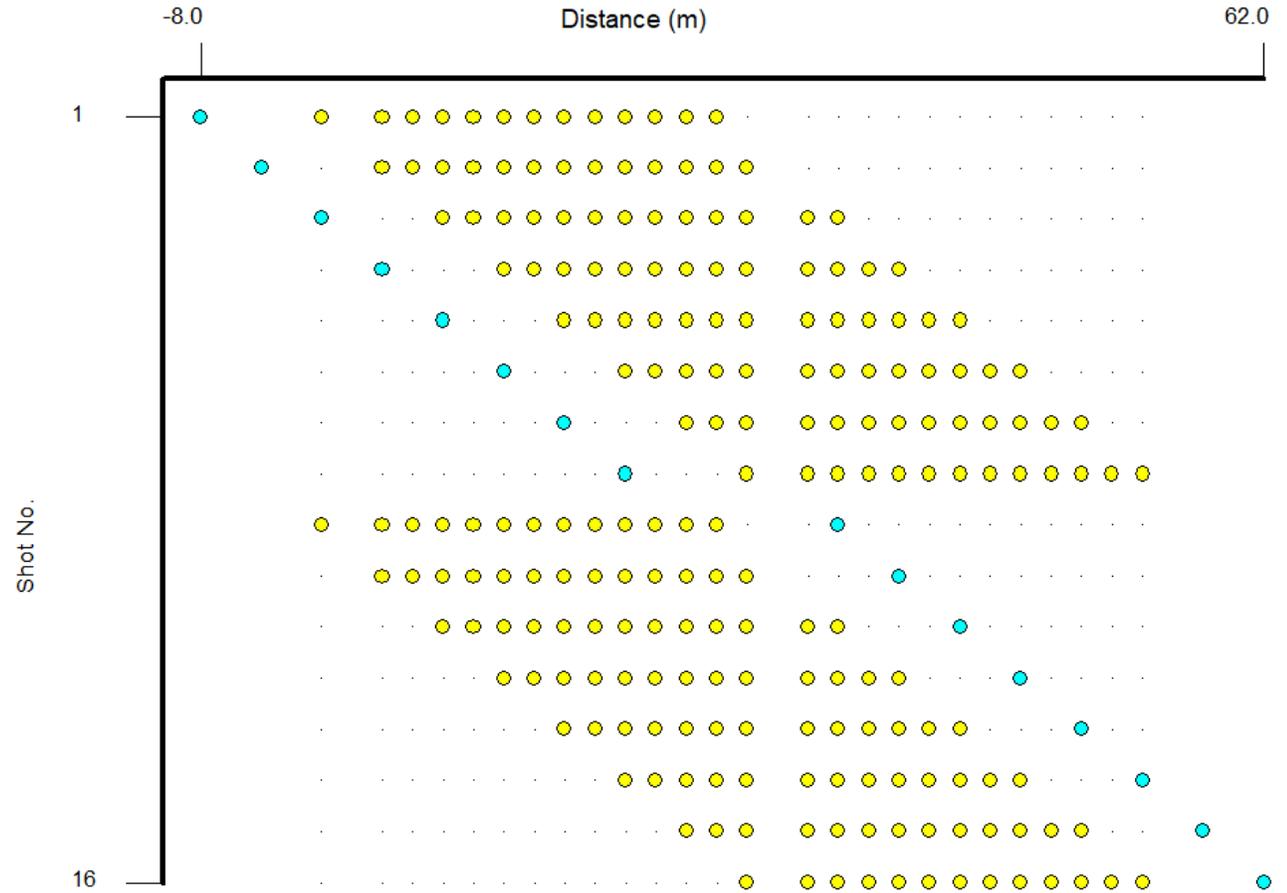
File (F) Edit/Display (E) View (V) Pick first arrivals (P) Downhole seismic analysis (D) Surface wave a

- Open waveform (SEG2) file(O)... Ctrl+O
- Save waveform (SEG2) file(S)... Ctrl+S
- Save waveform (SEG2) file as(A)...
- Open SEG2 file (SmartSeis)
- Open McSeis-3 file
- Open OYO 160MX (SEG1) file
- Open synthetic waveform (.8hd) file
- Open pick file
- Save pick file
- Print window display (P)... Ctrl+P
- Print preview (V)
- Page setup (R)...
- Group (File list) (G)**
- Options
- 1 C:\Koichi\...\stacked_0001.sg2
- 2 C:\Koichi\...\stacked_0000.sg2
- 3 stacked_0000_rec_dist.sg2
- 4 CTB_5_event_0000.sg2

400 600 800

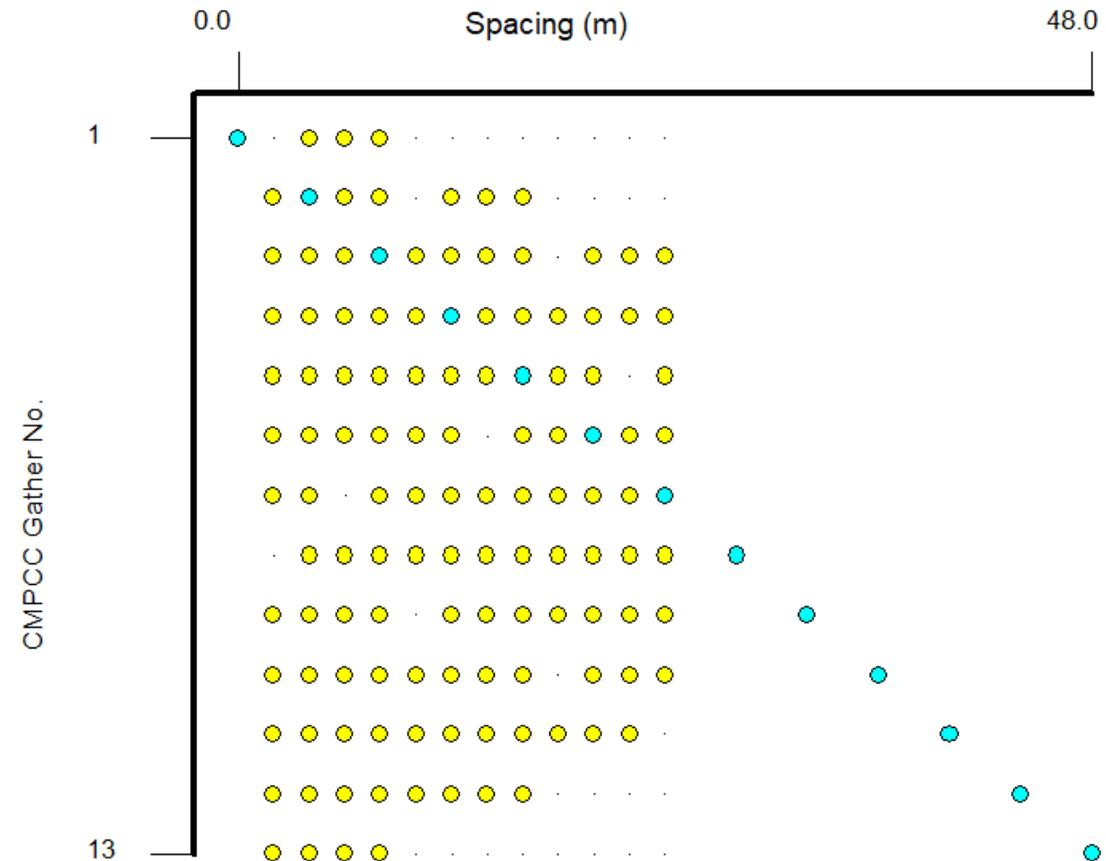


- Make file list
- Make file list(select a folder)
- Open file list
- Save file list(text)
- Save file list(XML)
- Show file list(G) Ctrl+G
- Set up geometry**

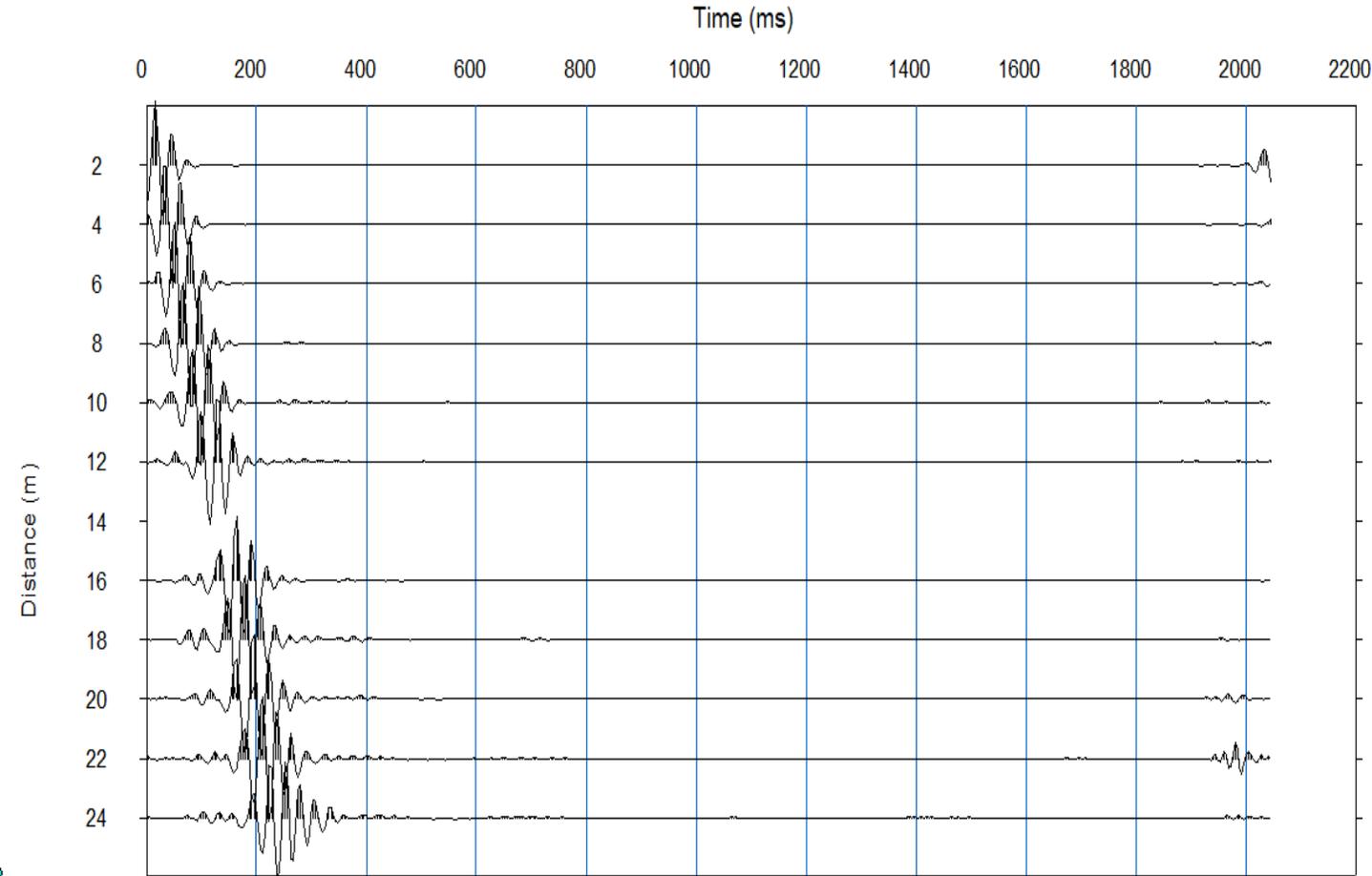


CMP-CC gathers

Geometry



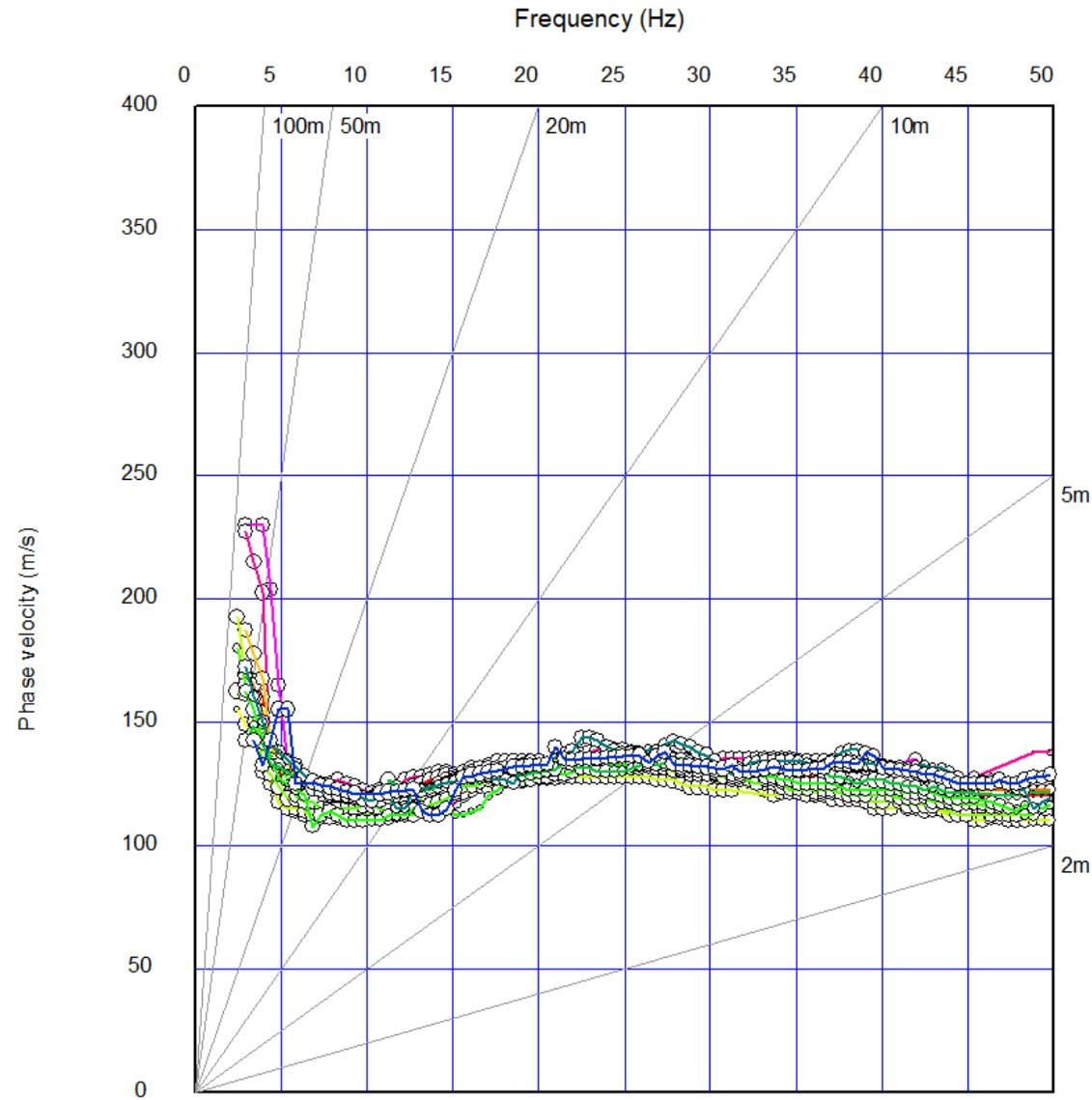
Example of CMP-CC gather



C:\Koichi\Request\Robin Glas(2021.12.10)\cmp_004800.sg2
cmp_000000.sg2-cmp_004800.sg2

Dispersion curves and velocity model

All dispersion curves



Dispersion curves : Tully_Line1 KH initial model-3.pvs

Initial velocity model

