

# Seismic reflection exercise: Read field data

**Reflexw - Data Import**

Fileheader-coordinates:  
DistanceDimen. **METER**  
data type **several shots**

filename specification:  
specification: **manual/automatic1**  
filename: **myline**  
filename factor: **1**

Time and comment specification:  
TimeDimension **ms** time resampling:  
time increment **0.5**  
sample number: **2048**  
file header: **1024** trace header: **256**

number: **1**

format specification:  
input format: **SEG2**  
output format: **new 32 bit floating point**  
scaling: **1**

ControlOptions:  
☐ control format ☐ swap bytes  
☐ fix endcoord. ☒ correct ampl.  
☐ read starttime ☐ ignore blocksize  
☐ ignore stringlengths

ConversionMode:  
conversion sequence **combine lines/shots**  
max.traces/file: **1048576**  
line distance: **0**  
tracenc./2D-line: **0**  
trace incr. **0**  
☐ meandering  
☐ check tracelength  
☒ move receivers  
☒ move shots

update traceheaders/gps coordinates:  
☐ use data folder  
update traceheaders:  
**no**  
utm-conversion:  
**no**  
☐ calculate distances

ControlPanel:  
**Convert to Reflex**  
☒ CheckExistingFiles  
☐ check data for NAN  
☒ PrimaryFile  
☐ SecondaryFile  
**Header Info**  
**Exit**  
**Help**

**Open**

Look in: **ASCII**

Name	Date modified
<b>all_shots</b>	<b>21.12.2016 11:59</b>
ALLSHOTS000000alle.SGY	22.12.2016 13:57
geom.STD	22.12.2016 14:04
geometry	19.01.2017 17:02
IN1	19.01.2017 17:04

File name: **all\_shots** **Open**  
Files of type: **original data** **Cancel**  
☐ Open as read-only

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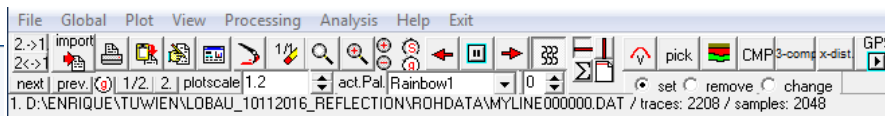
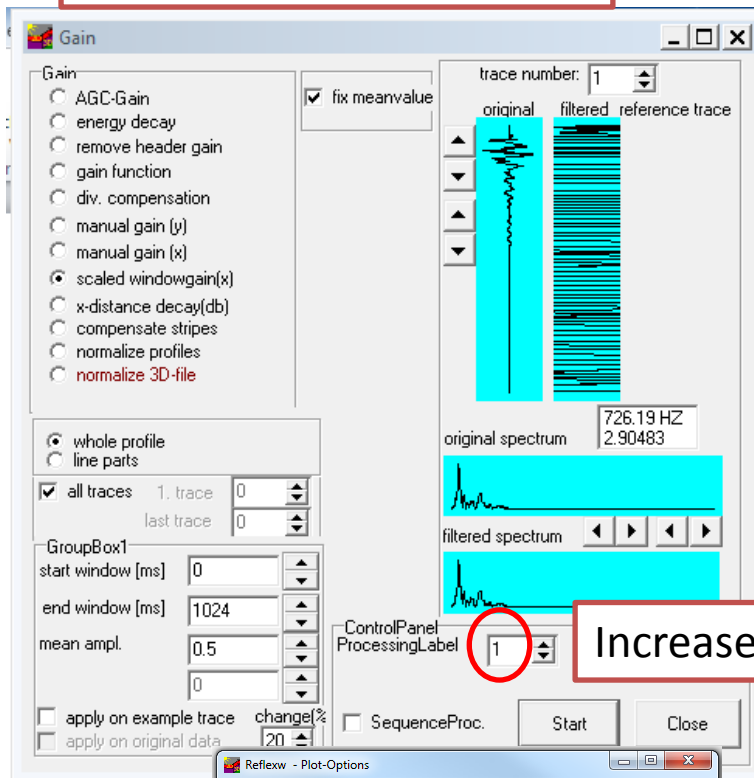
ControlPanel:  
**Convert to Reflex**  
☒ CheckExistingFiles  
☐ check data for NAN  
☒ PrimaryFile  
☐ SecondaryFile  
**Header Info**  
**Exit**  
**Help**

File Edit Search View

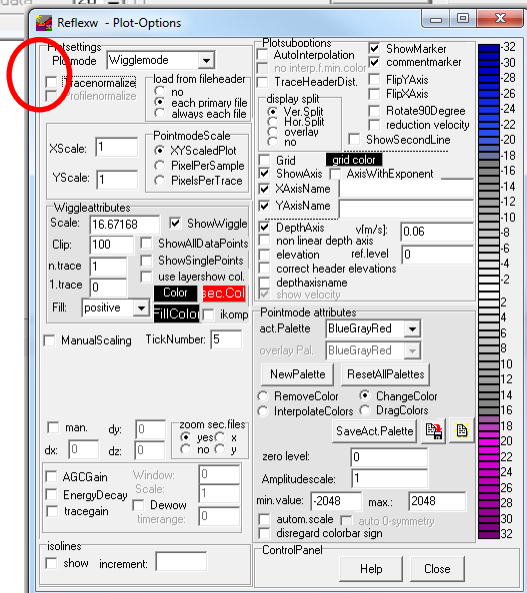
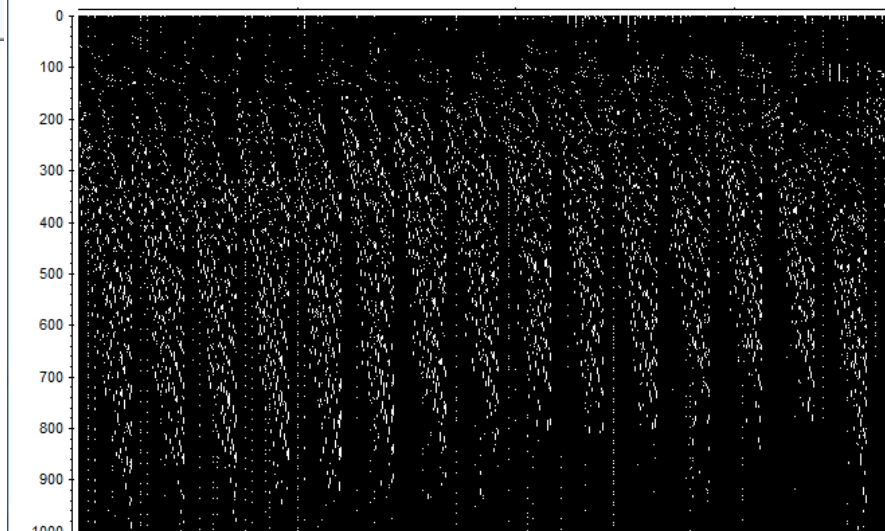
all\_shots.lst IMPORT

1	rec0001.sg2
2	rec0002.sg2
3	rec0003.sg2
4	rec0004.sg2
5	rec0005.sg2
6	rec0006.sg2
7	rec0007.sg2
8	rec0008.sg2
9	rec0009.sg2
10	rec0010.sg2
11	rec0011.sg2
12	rec0012.sg2
13	rec0013.sg2
14	rec0014.sg2
15	rec0015.sg2
16	rec0016.sg2
17	rec0017.sg2
18	rec0018.sg2
19	rec0019.sg2
20	rec0020.sg2
21	rec0021.sg2
22	rec0022.sg2
23	rec0023.sg2
24	rec0024.sg2
25	rec0025.sg2
26	rec0026.sg2
27	rec0027.sg2
28	rec0028.sg2
29	rec0029.sg2
30	rec0030.sg2
31	rec0031.sg2
32	rec0032.sg2
33	rec0033.sg2
34	rec0034.sg2
35	rec0035.sg2
36	rec0036.sg2
37	rec0037.sg2
38	rec0038.sg2
39	rec0039.sg2
40	rec0040.sg2
41	rec0041.sg2
42	rec0042.sg2
43	rec0043.sg2
44	rec0044.sg2
45	rec0045.sg2
46	rec0046.sg2

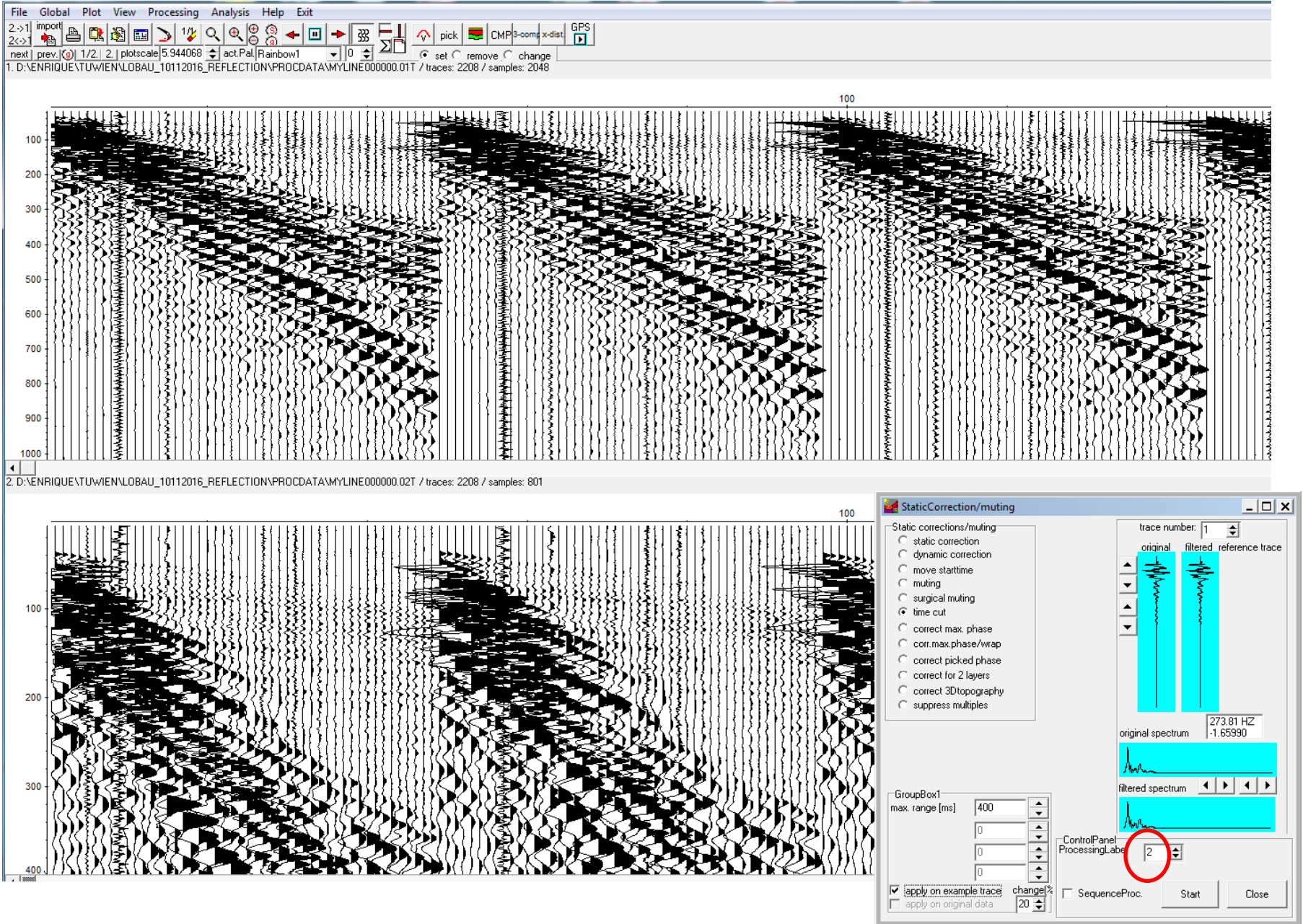
# Gain – Scaled windowgain



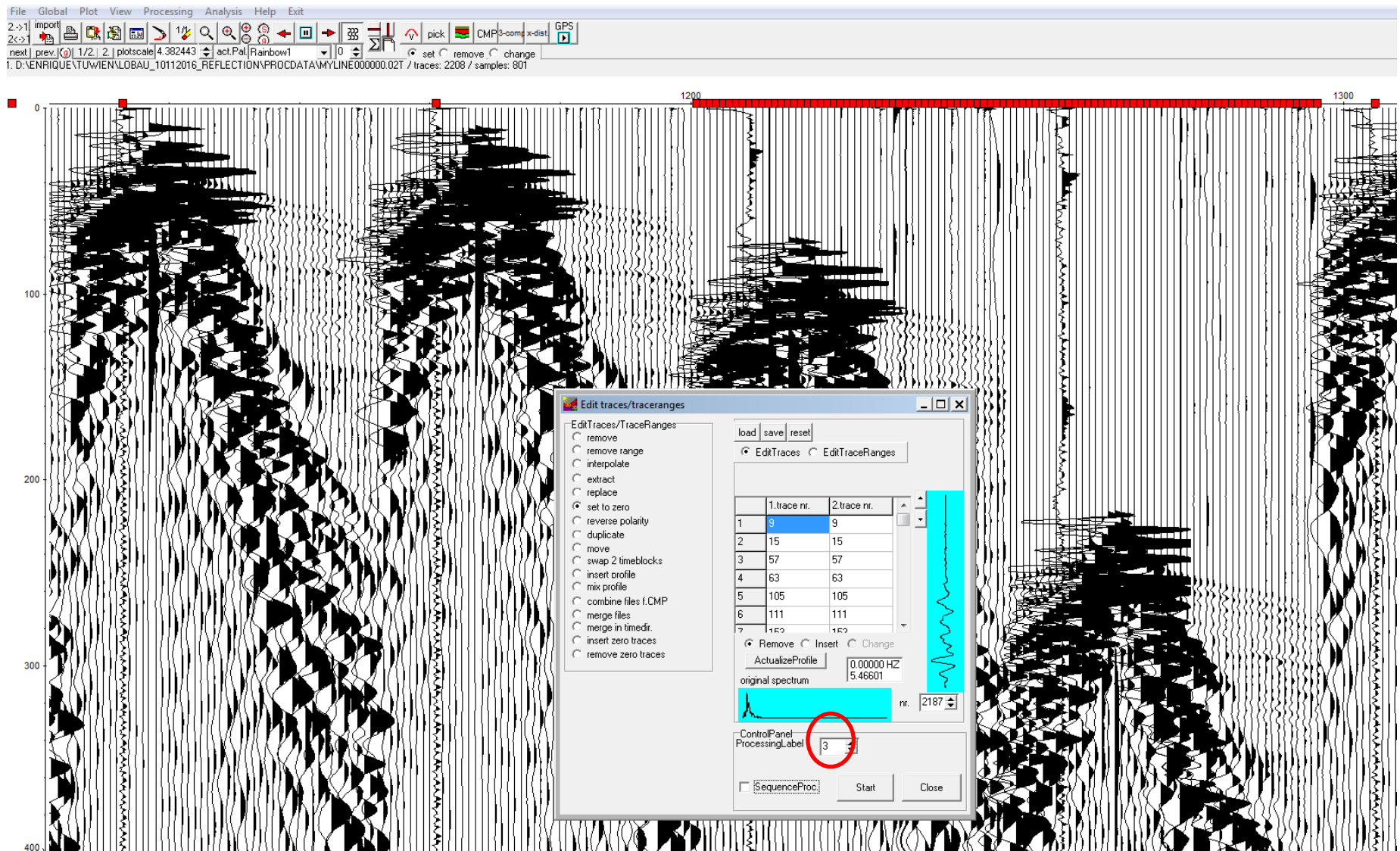
2. D:\ENRIQUE\TUWIEN\LOBAU\_10112016\_REFLECTION\PROC DATA\MYLINE000000.01T / traces: 2208 / samples: 2048



Reflections are above 400ms - use „time cut“ to cut the record from 400-1024ms)



Edit traces ( kill bad traces and shots with trigger errors – see recording.xls)  
Click on every trace to be killed – save the list (e.g. setzero.001\_2kill) and kill the picked traces



Define geometry for the line (save geometry on ASCII) and apply std. geometry

File Global Plot View Processing Analysis Help Exit

2->1 raw 1/2 2 plotscale 0.046384 act.Pal Rainbow1 0

next prev. 1/2 2 plotscale 0.046384 act.Pal Rainbow1 0

CMP-sorting/stack geometry

standard geometry

☐ moving line

☒ fixed line

edit single traces

read from ascii-file

save geometry

CMPBin: 0

show geometry

☒ geometry

☐ index file

☐ no

apply std.geometry

save on AsciiFile

reload geometry

OffsetBin: 0.0001

set remove change

standard geometry

nr.of channels 48

get all field record

first trace 1 1

last trace 2208 46

shot start 0

shot increment 2

shot offset 0

receiver increment 2

receiver offset 0

first receiver 21

left shot receiver 0

right shot receiver 0

last receiver 115

show stand.geometry

view geometry

standard line direction

☒ x-direction

☐ y-direction shots/rec.

☐ y-direction shots

☐ y-direction rec.

☐ GPS-positions

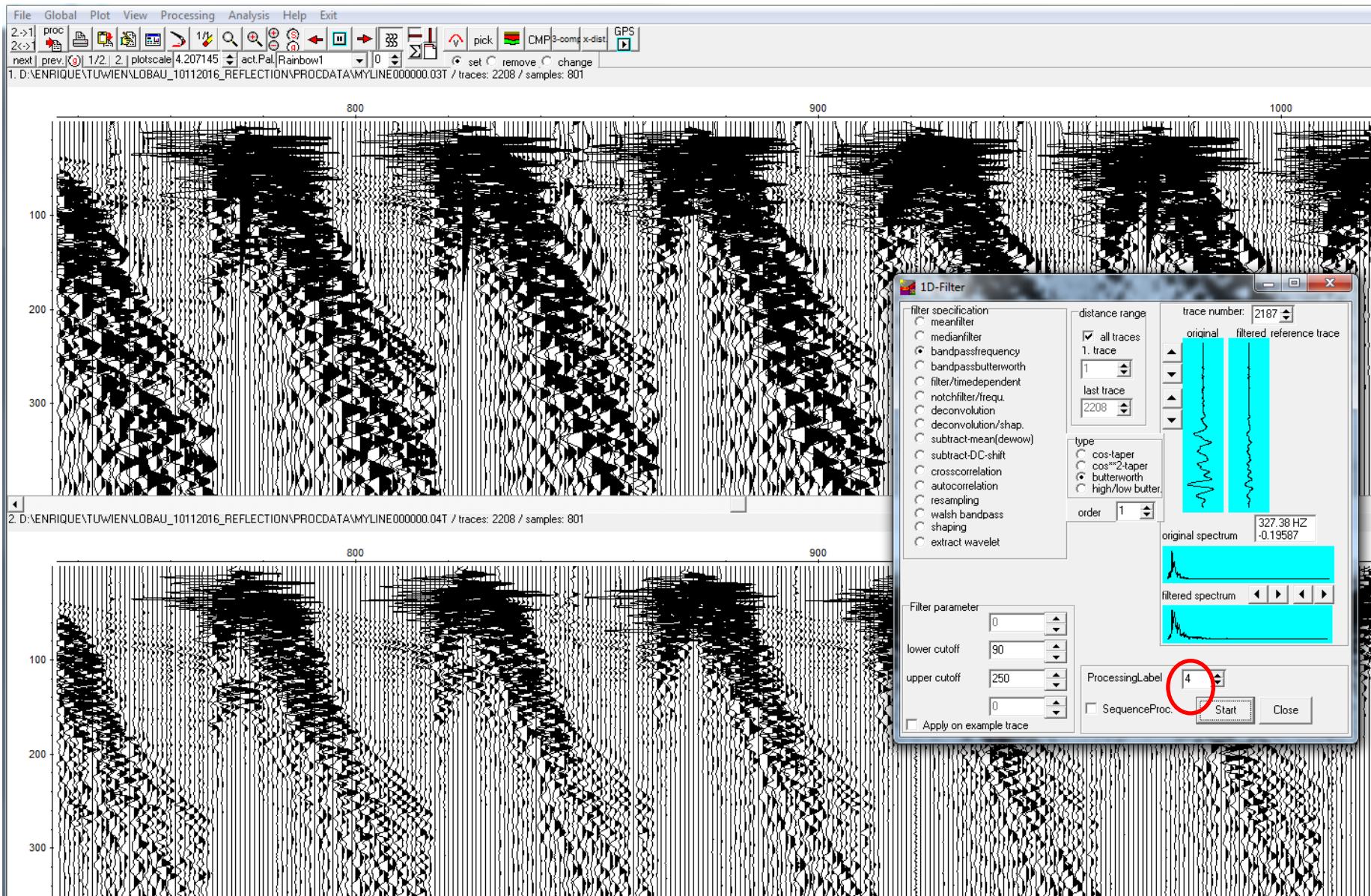
save load

shot no 1.trace last trace shot x shot y reck start reck end recy start recy end

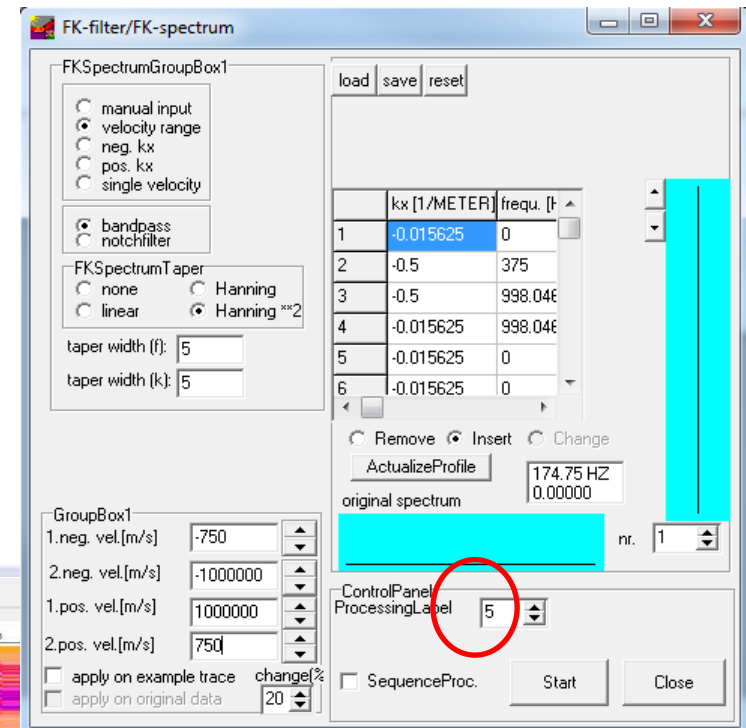
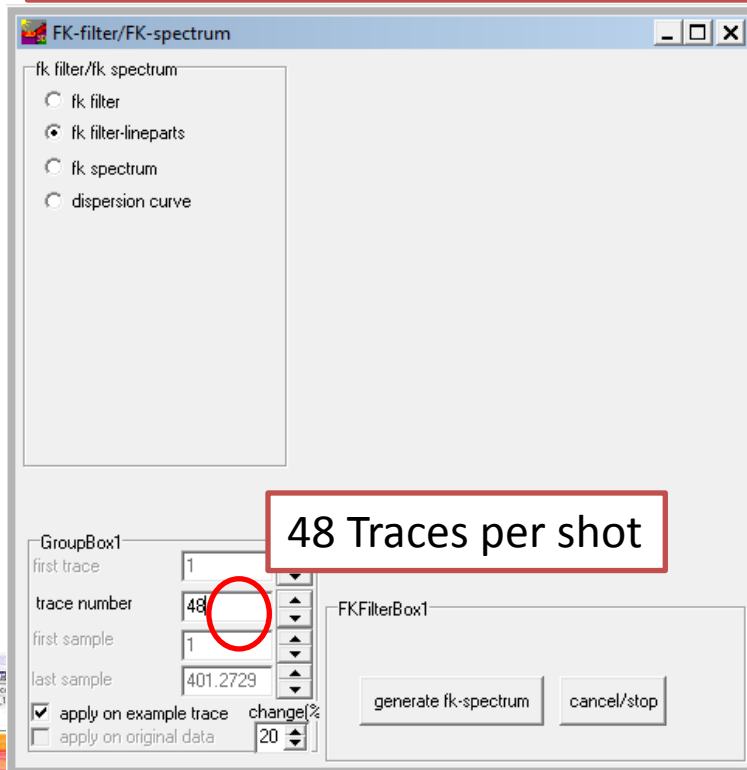
1	1	2208	0	0	0	0	0	0	0
2	49	96	2	0	21	115	0	0	0
3	97	144	4	0	21	115	0	0	0
4	145	192	6	0	21	115	0	0	0
5	193	240	8	0	21	115	0	0	0
6	241	288	10	0	21	115	0	0	0
7	289	336	12	0	21	115	0	0	0
8	337	384	14	0	21	115	0	0	0
9	385	432	16	0	21	115	0	0	0
10	433	480	18	0	21	115	0	0	0
11	481	528	20	0	21	115	0	0	0
12	529	576	22	0	21	115	0	0	0
13	577	624	24	0	21	115	0	0	0
14	625	672	26	0	21	115	0	0	0
15	673	720	28	0	21	115	0	0	0
16	721	768	30	0	21	115	0	0	0
17	769	816	32	0	21	115	0	0	0
18	817	864	34	0	21	115	0	0	0
19	865	912	36	0	21	115	0	0	0
20	913	960	38	0	21	115	0	0	0
21	961	1008	40	0	21	115	0	0	0
22	1009	1056	42	0	21	115	0	0	0
23	1057	1104	44	0	21	115	0	0	0
24	1105	1152	46	0	21	115	0	0	0

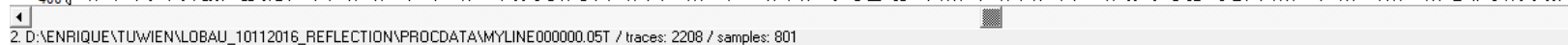
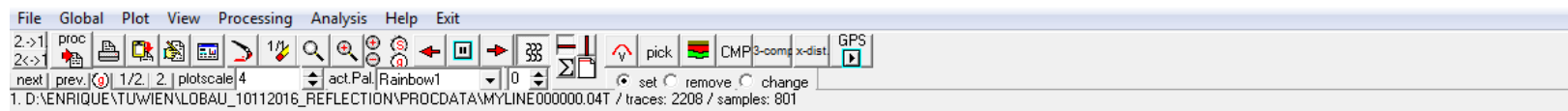


# 1D-Filter (Bandpassfrequency filter to see the reflections clearly)



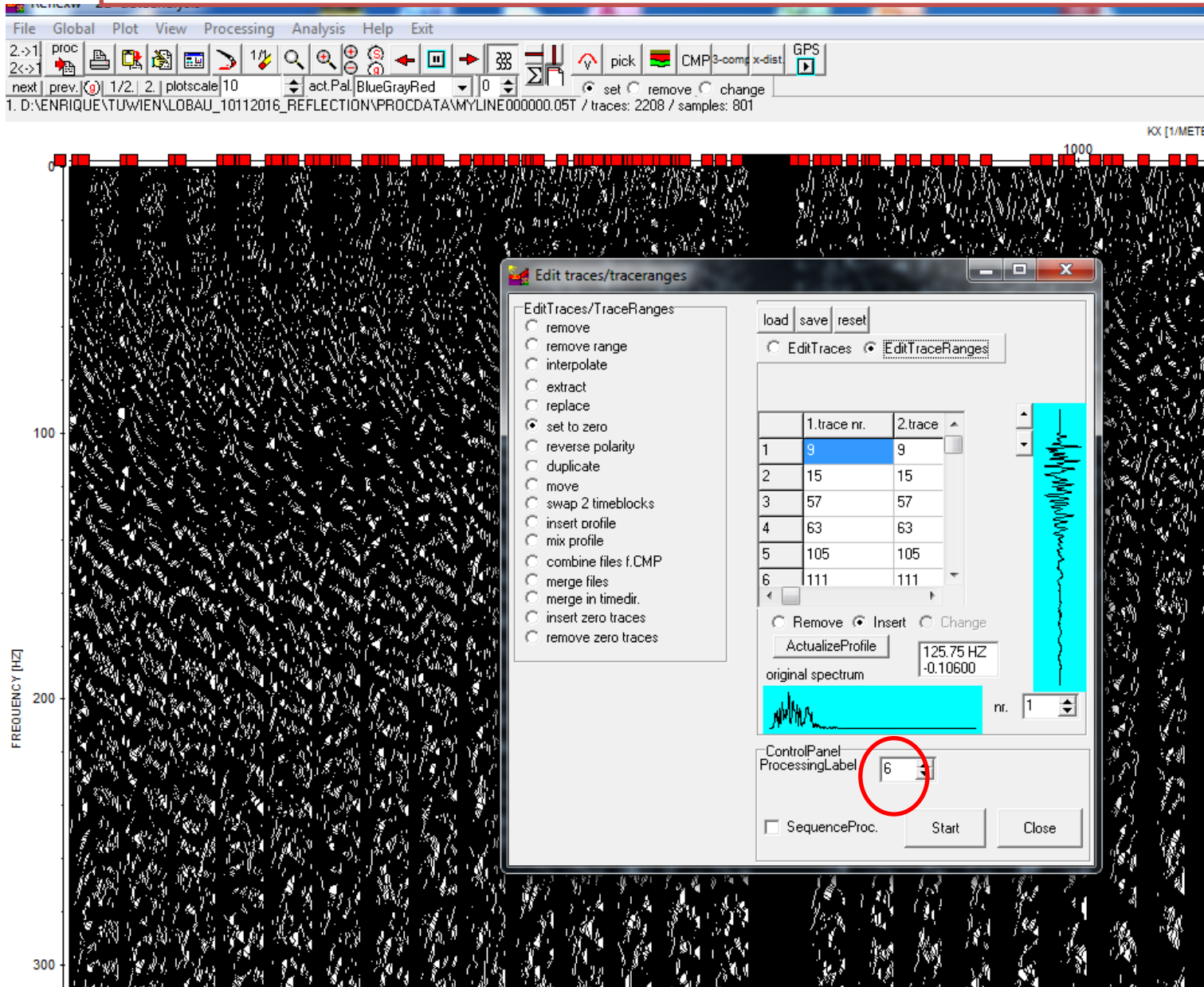
# FK-Filter: create FK-Filter lineparts, in the new window define the vel. range



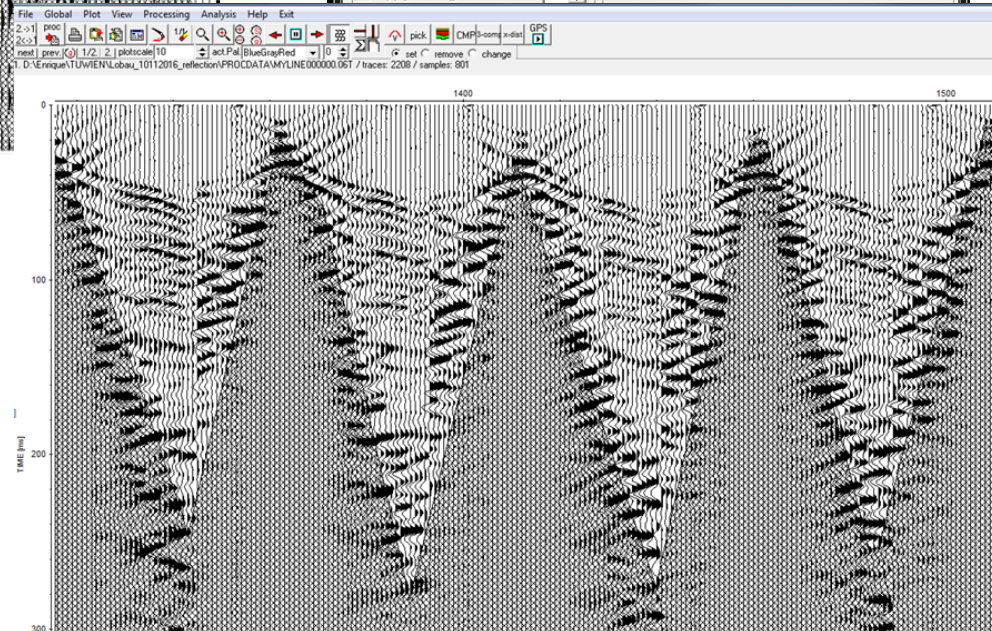
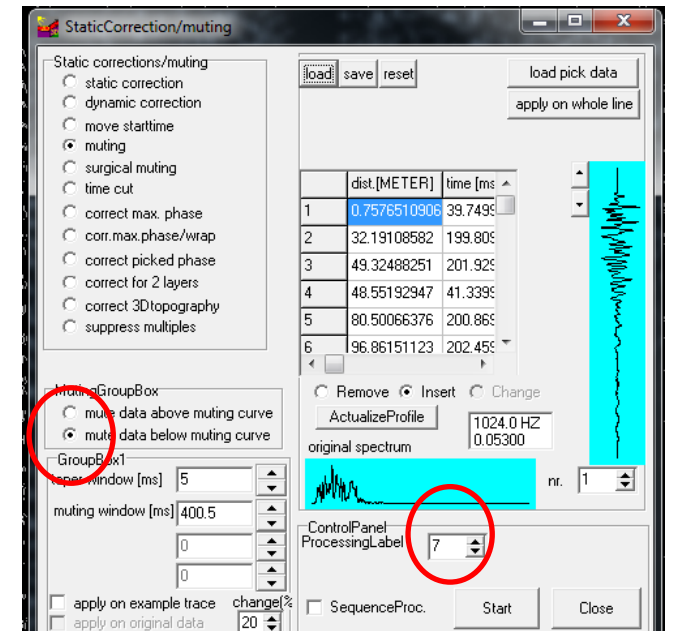
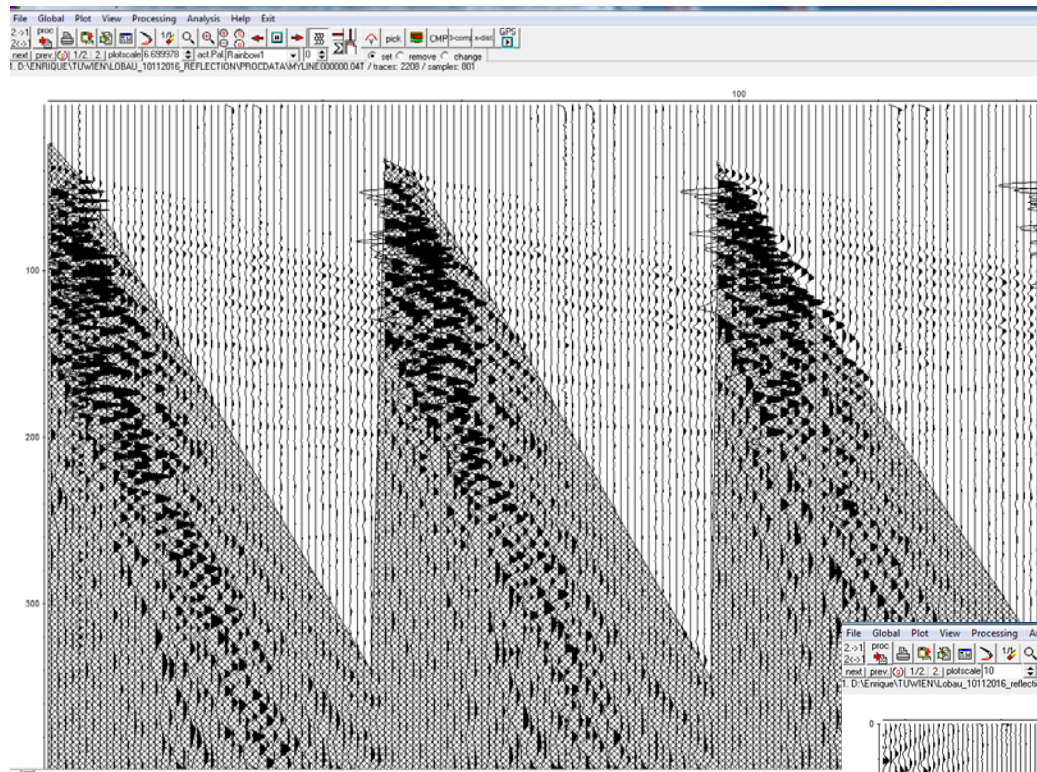




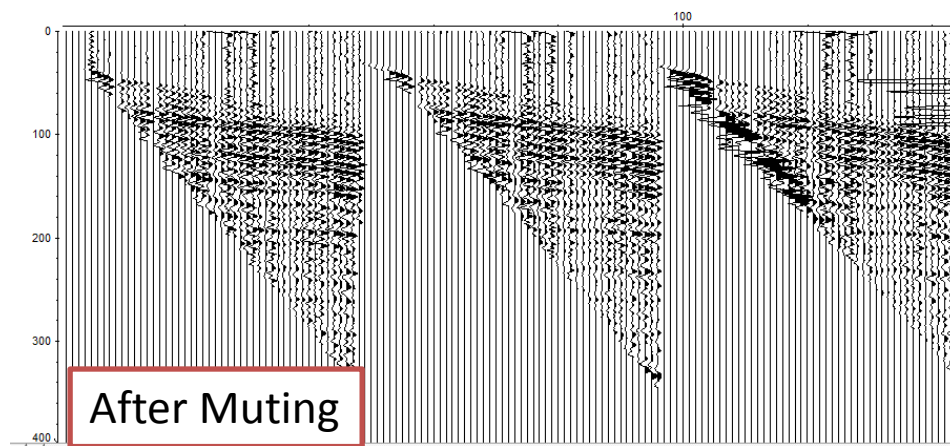
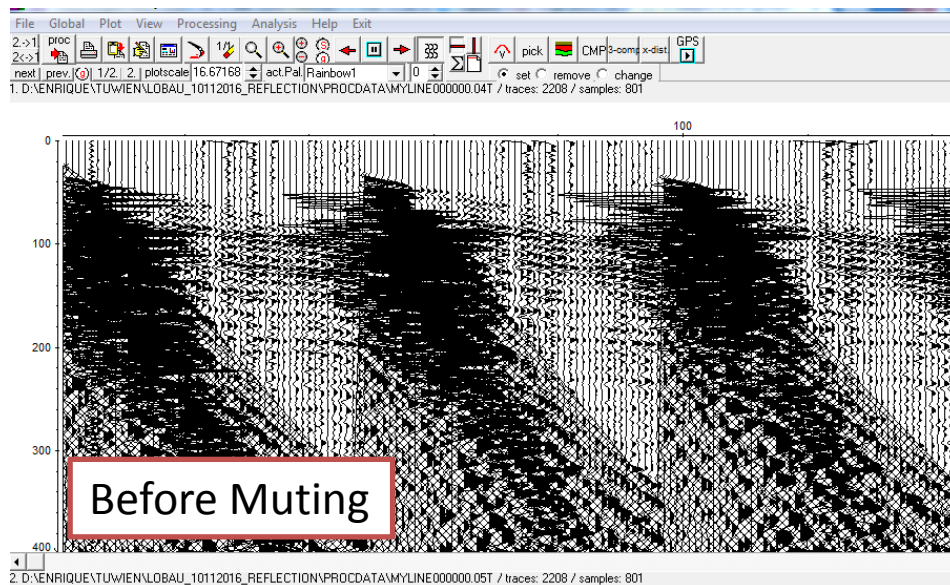
Repeat trace killing using the file with picked traces (e.g. setzero.001\_2kill)



# Muting – below curve – click to define the area to be muted







## Next Steps:

- CMP → Geometry (load if necessary)
- CMP sorting/stack → choose CMP or shot (choose one e.g. 25)
- Velocity analysis → Semblance → set min. Vel (e.g. 400m/s), Max Vel (e.g. 3500m/s)  
velinterval (e.g. 100 m/s) → start
- Repeat by hyperbola: Click on the semblance when the hyperbola match the reflection waves
- Save (e.g. SHOT0025.vel)
- 2D-Model → create (choose the vel file e.g. SHOT0025.vel) write the 2D-Vel file (e.g. 2DVEL)
- Take the screenshot for the report and close the window
- Back to CMP. Click on CMP or SHOT until you see all CMP or SHOT (1 to 93 or 1 to 46)
- Load 2D model, choose the 2Dvelocity file (e.g. 2DVEL.2DM)
- Stack → give a file name for the stack (e.g. STK) you will see in a new window the stacked section. Close the window. Click on CMP to go out
- Load the stacked section: File → Open → Procddata choose the stack file (e.g. STK.00t)
- Increase the plotscale until you see the waves (arrow above)
- Migration/Time depth conversion → Timedepth conversion (0m to 500m) → start  
load the 2D vel file (e.g. 2DVEL.2DM). You see the velocity section in a new window,  
close it and you will see the depth stacked section. Increase plotscale as necessary and  
make a screenshot for the report.