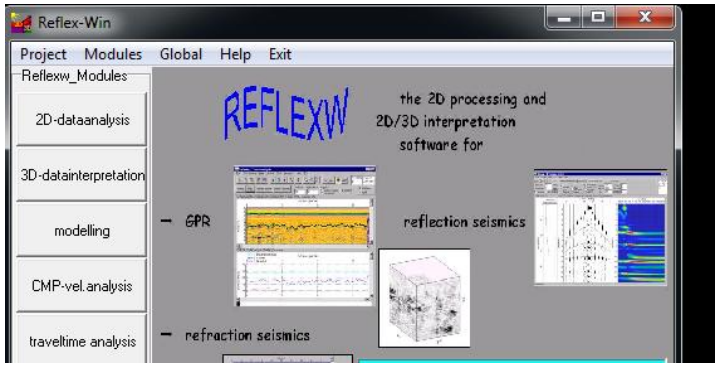
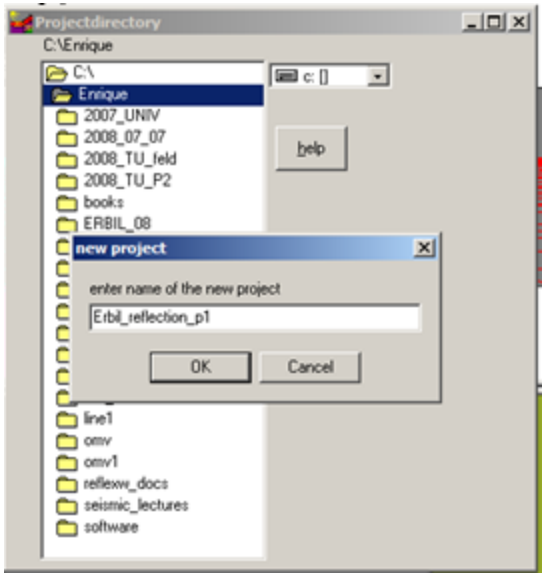
Seismic Line (Exercise)

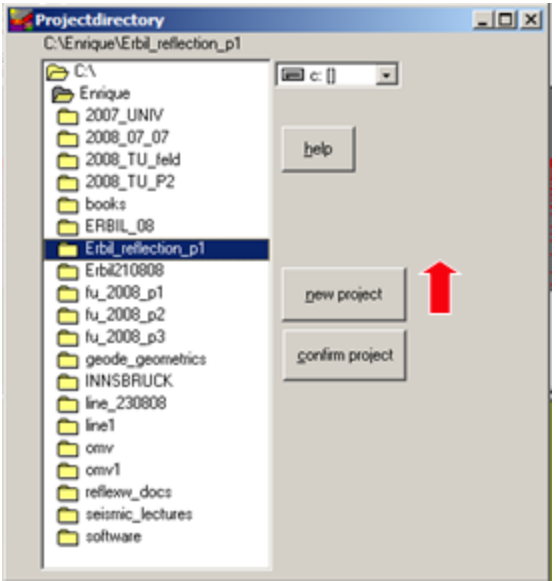
Reflection Profile (Erbil exercise)		
27-Aug-08		
Fist Geophone	50 m	
Last Geophone	765 m	
First Trace	1	
Last trace	5184	
d(G-G)	5m	
Filename	**Shot (m)**	**G1(m)**
rec0036.sg2	0	50
rec0035.sg2	10	50
rec0034.sg2	20	50
rec0033.sg2	30	50
rec0032.sg2	40	50
rec0031.sg2	50	50
rec0030.sg2	60	50
rec0029.sg2	70	50
rec0028.sg2	80	50
rec0027.sg2	90	50
rec0026.sg2	100	50
rec0025.sg2	110	50
rec0024.sg2	120	50
rec0023.sg2	130	50
rec0022.sg2	140	50
rec0021.sg2	150	50
rec0020.sg2	160	50
rec0019.sg2	170	50
rec0018.sg2	180	50
rec0017.sg2	190	50
rec0016.sg2	200	50
rec0015.sg2	210	50
rec0014.sg2	220	50
rec0013.sg2	230	50
rec0012.sg2	240	50
rec0011.sg2	250	50
rec0010.sg2	260	50
rec0009.sg2	270	50
rec0008.sg2	280	50
rec0007.sg2	290	50
rec0006.sg2	300	50
rec0005.sg2	310	50
rec0004.sg2	320	50
rec0003.sg2	330	50
rec0002.sg2	340	50
rec0001.sg2	350	50



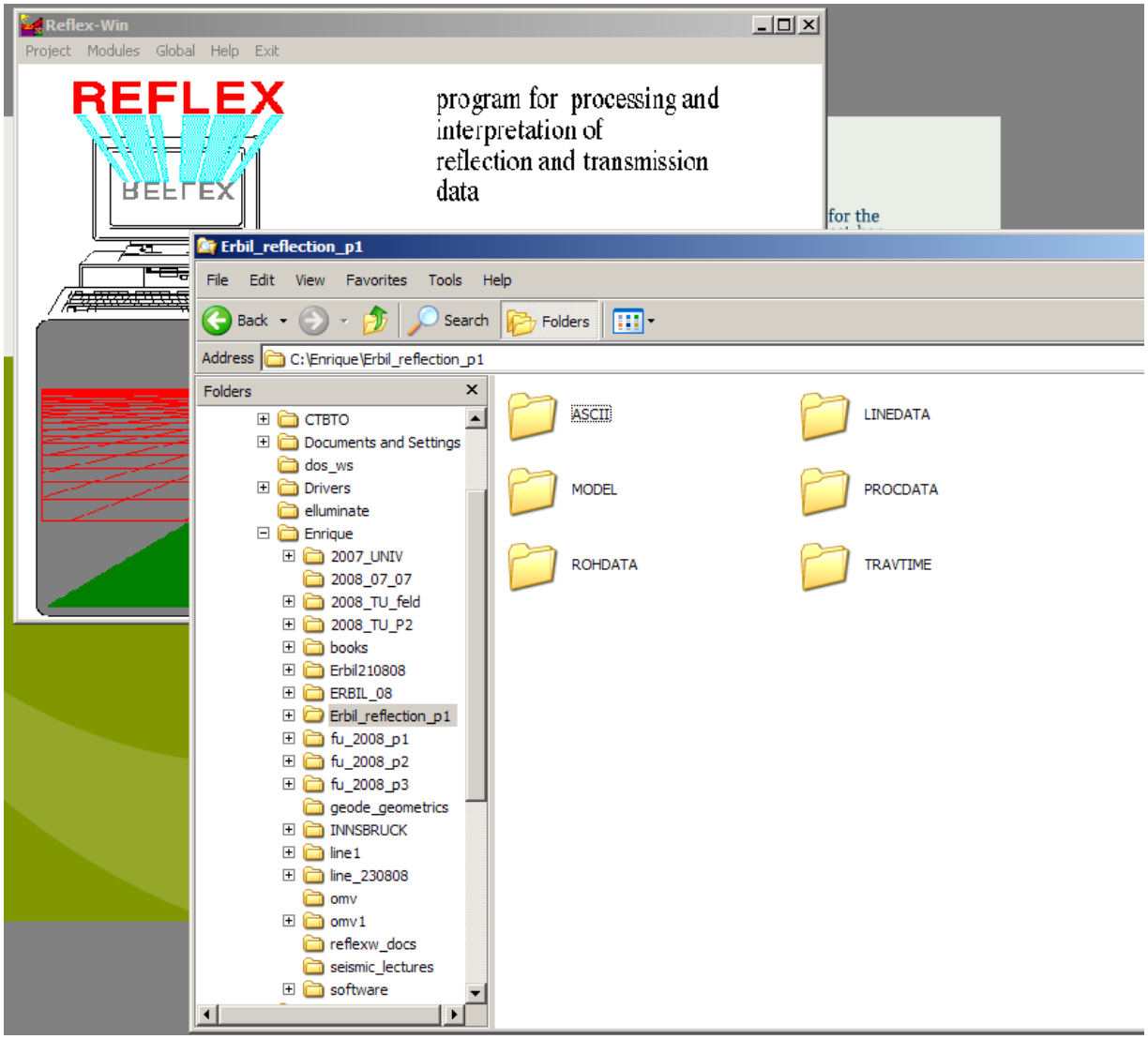
144 Receiver / shot

36 / 179 shots



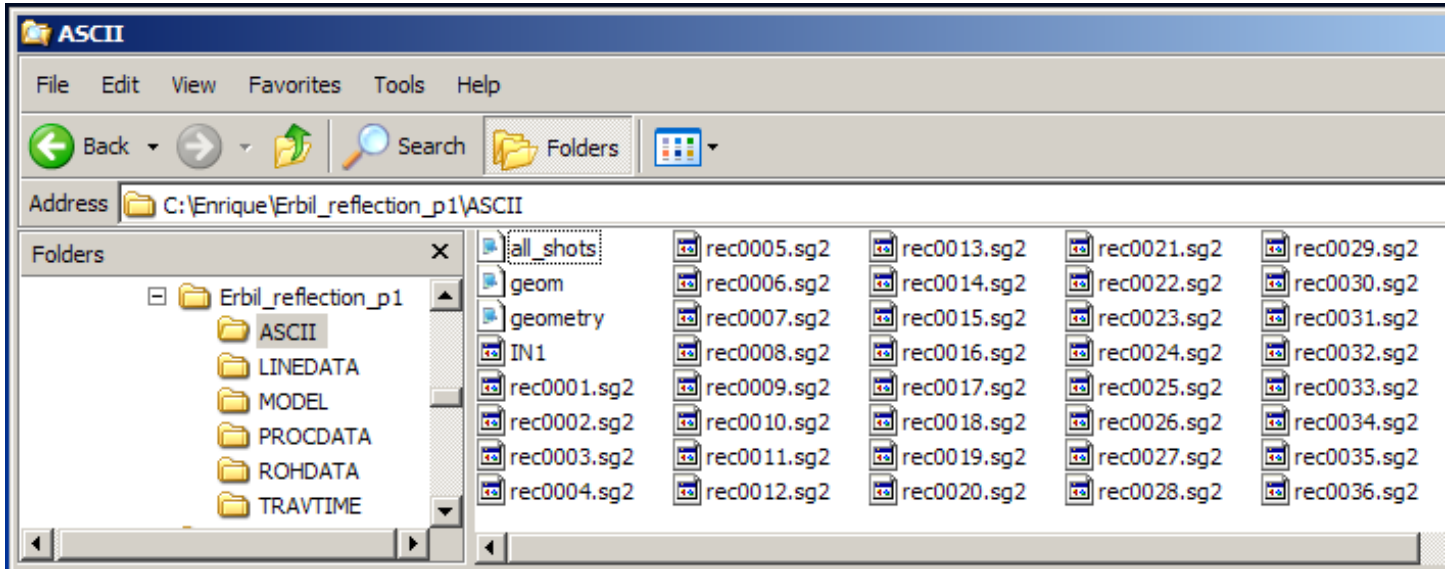


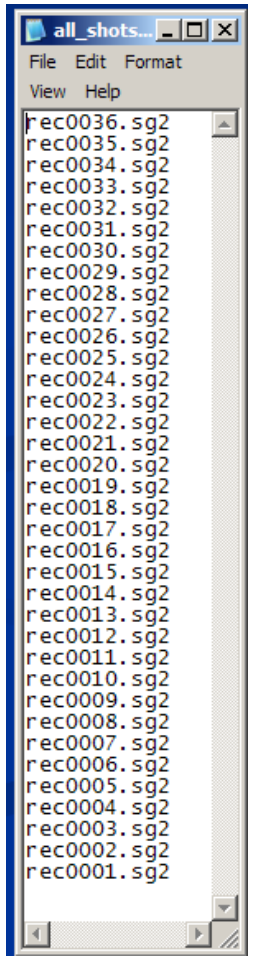
Project Directories



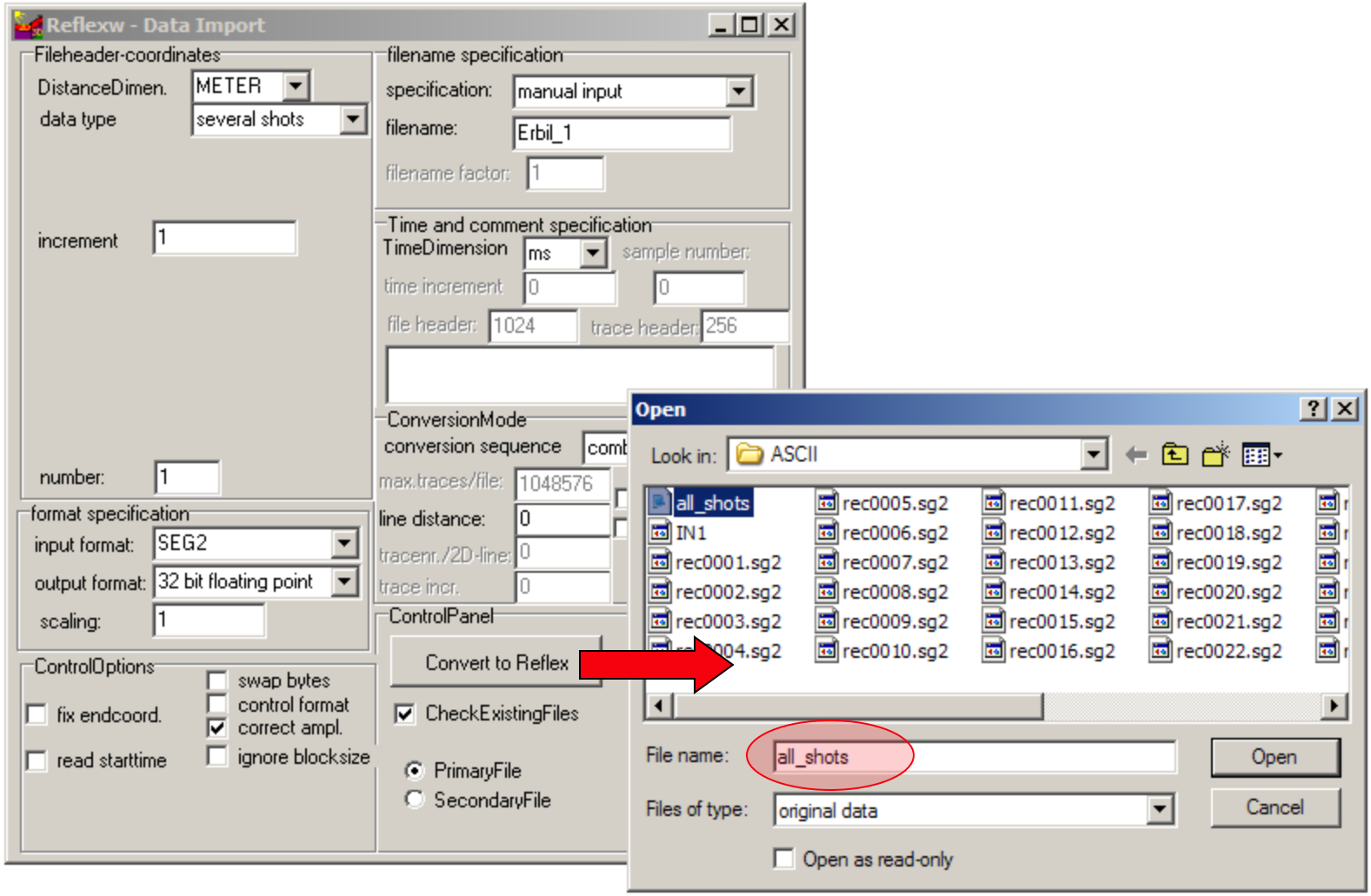
Field records

File: **all_shots.lst**

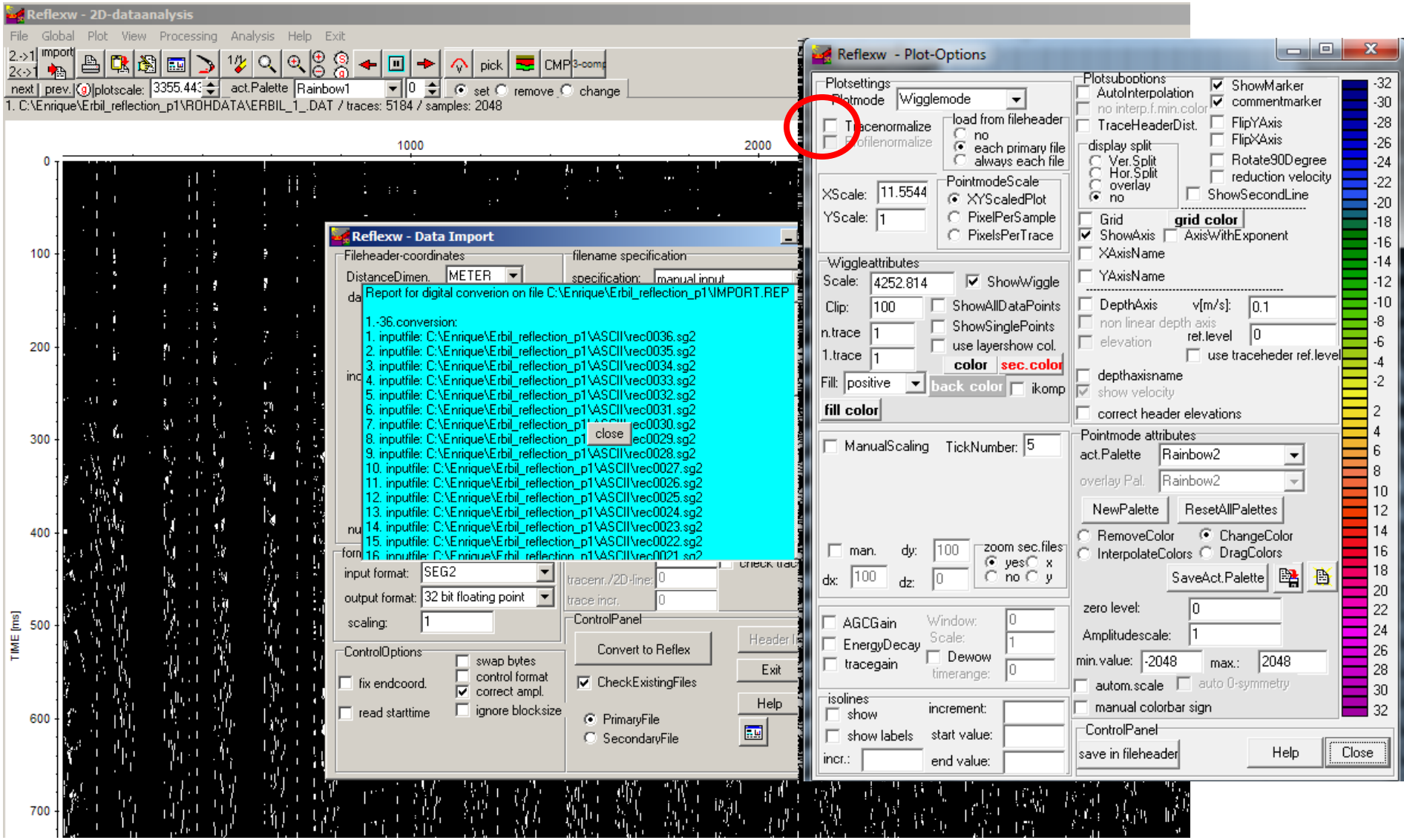




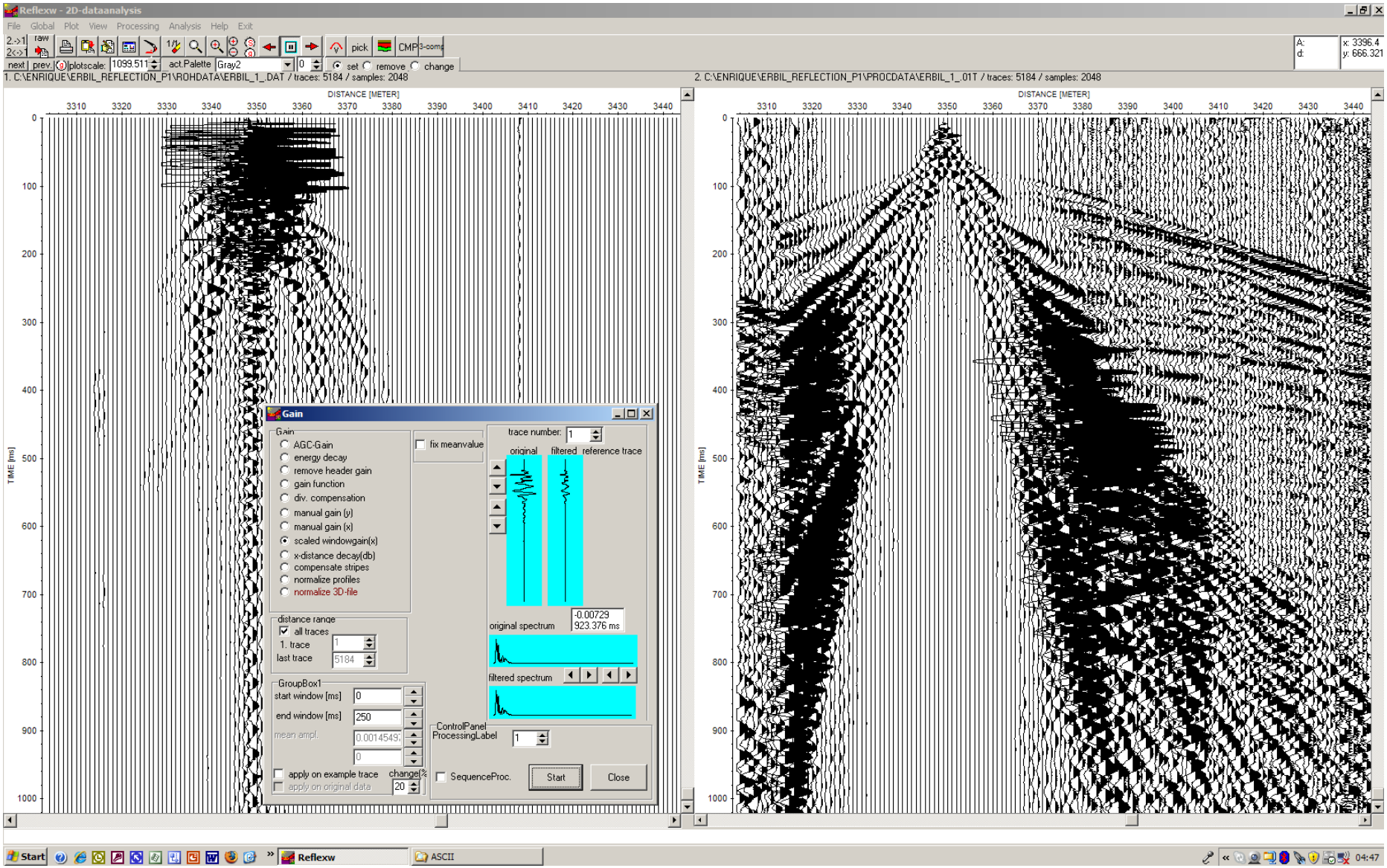
Data import (2/2)



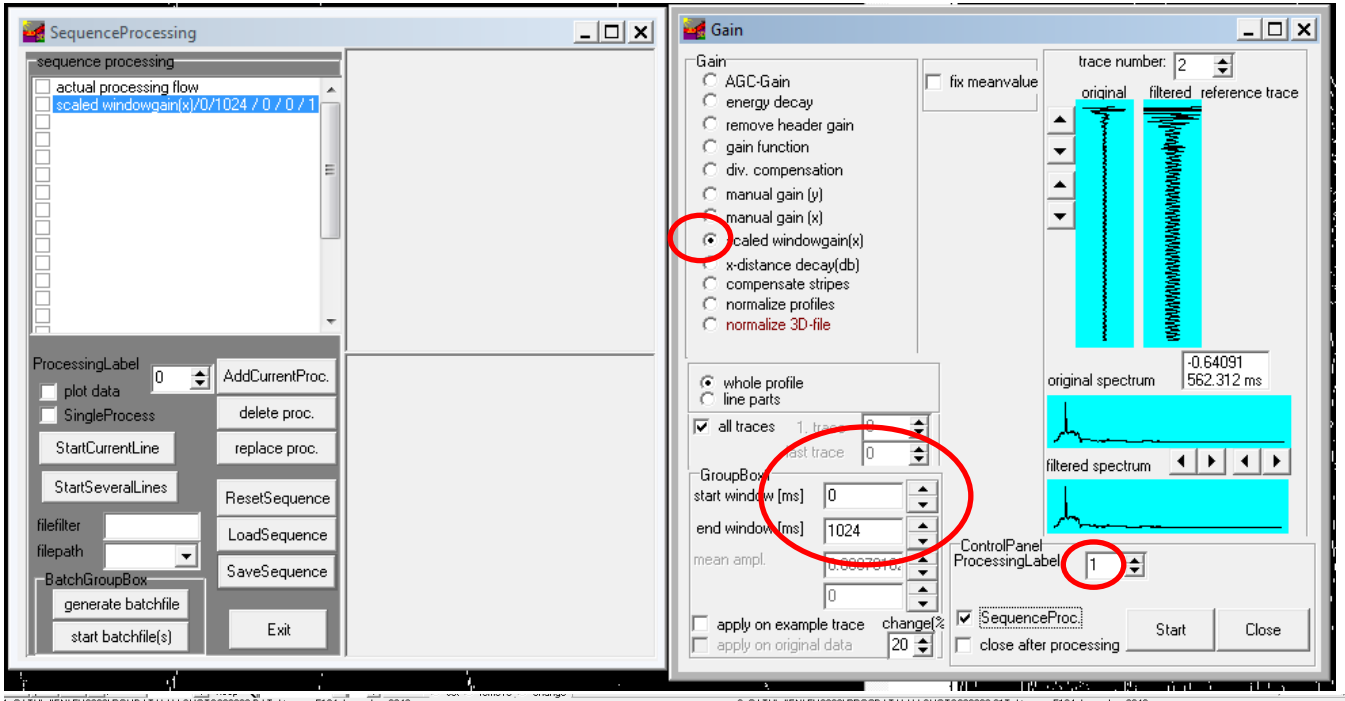
Data converted to Reflex format

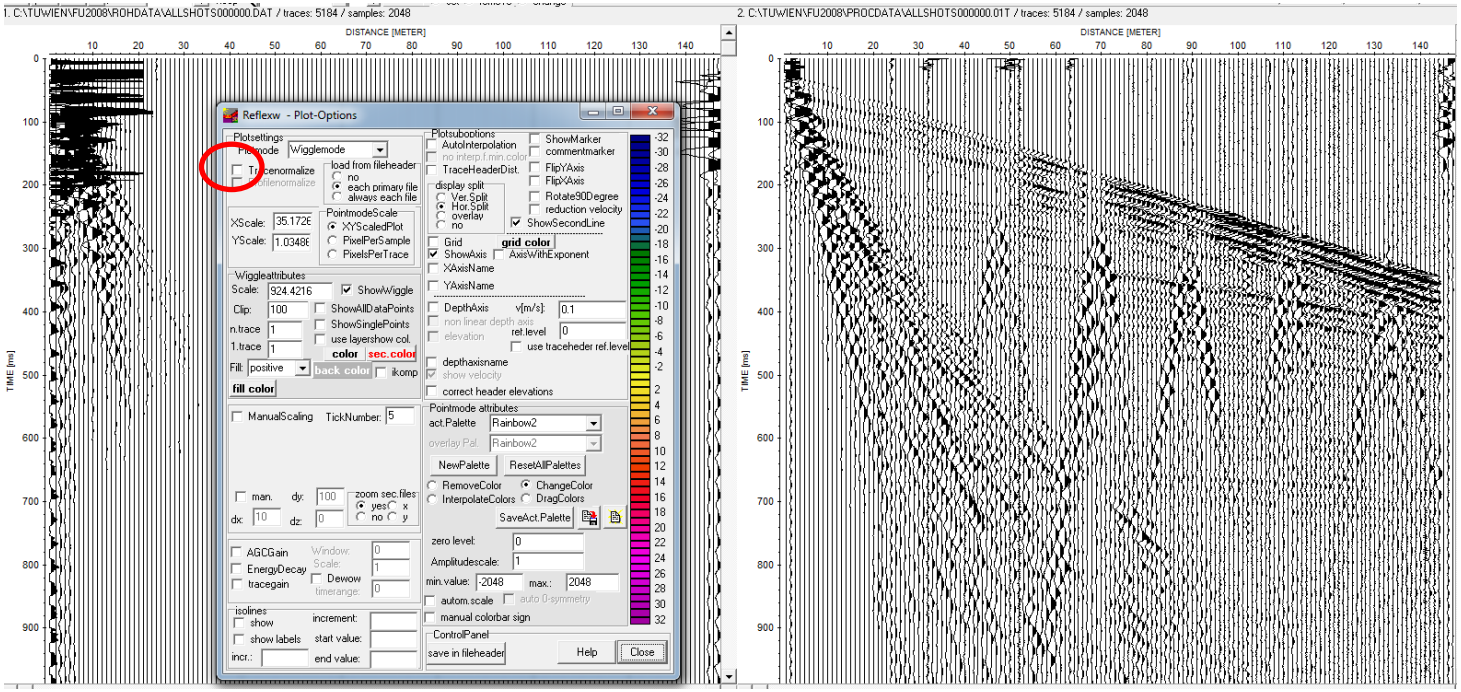


Scaled Windowgain(x)



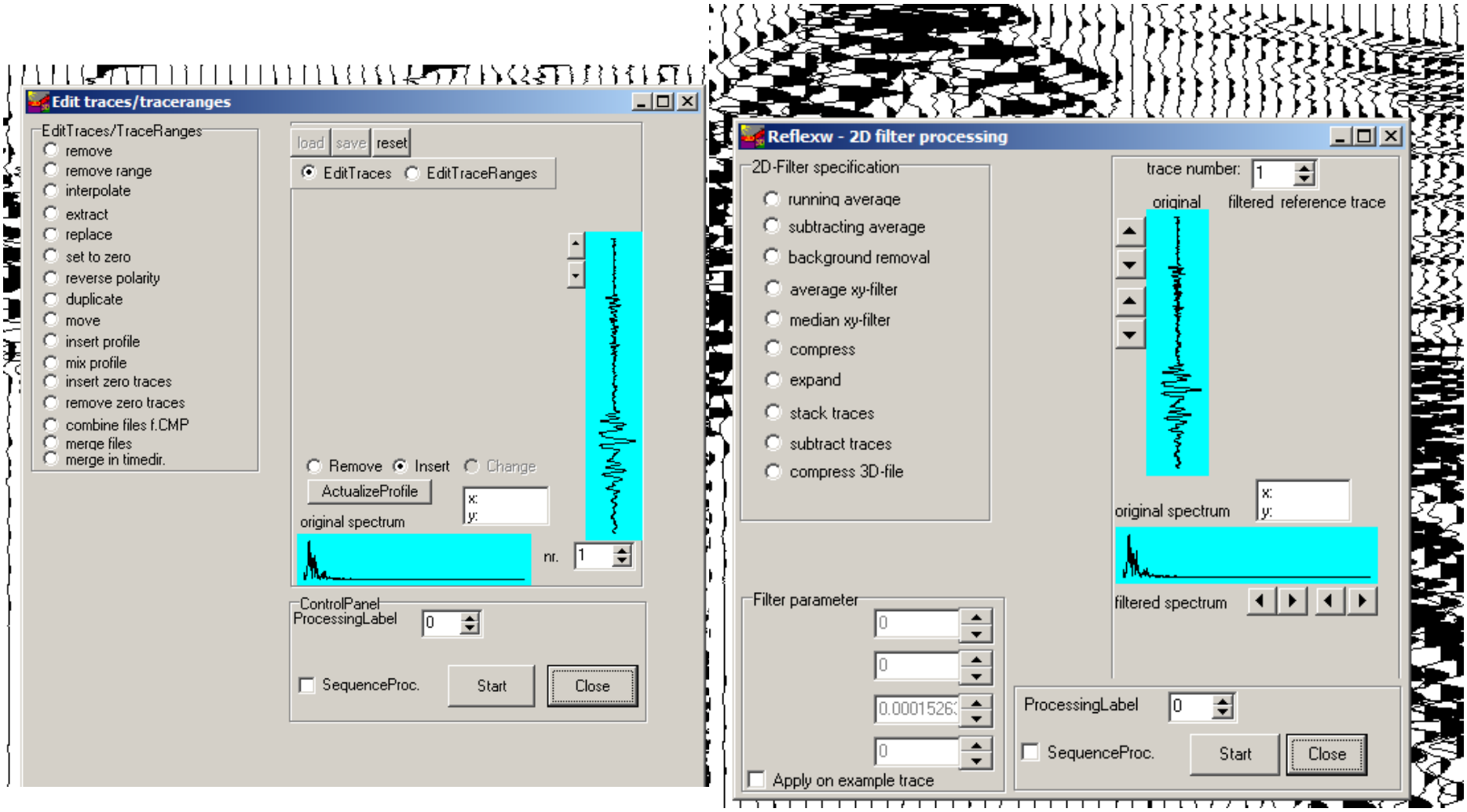
GAIN


SequenceProcessing
sequence processing
actual processing flow
scaled windowgain(x)/0/1024 / 0 / 0 / 1
ProcessingLabel
plot data
SingleProcess
StartCurrentLine
StartSeverallLines
filefilter
filepath
BatchGroupBox
generate batchfile
start batchfile(s)
AddCurrentProc.
delete proc.
replace proc.
ResetSequence
LoadSequence
SaveSequence
Exit
Gain
Gain
AGC-Gain
energy decay
remove header gain
gain function
div. compensation
manual gain (y)
manual gain (x)
scaled windowgain(x)
x-distance decay(db)
compensate stripes
normalize profiles
normalize 3D-file
fix meanvalue
trace number:
original
filtered
reference trace
original spectrum
-0.64091
562.312 ms
filtered spectrum
whole profile
line parts
all traces
GroupBox
start window [ms]
end window [ms]
mean ampl.
apply on example trace
apply on original data
change[%]
ControlPanel
ProcessingLabel
SequenceProc.
close after processing
Start
Close

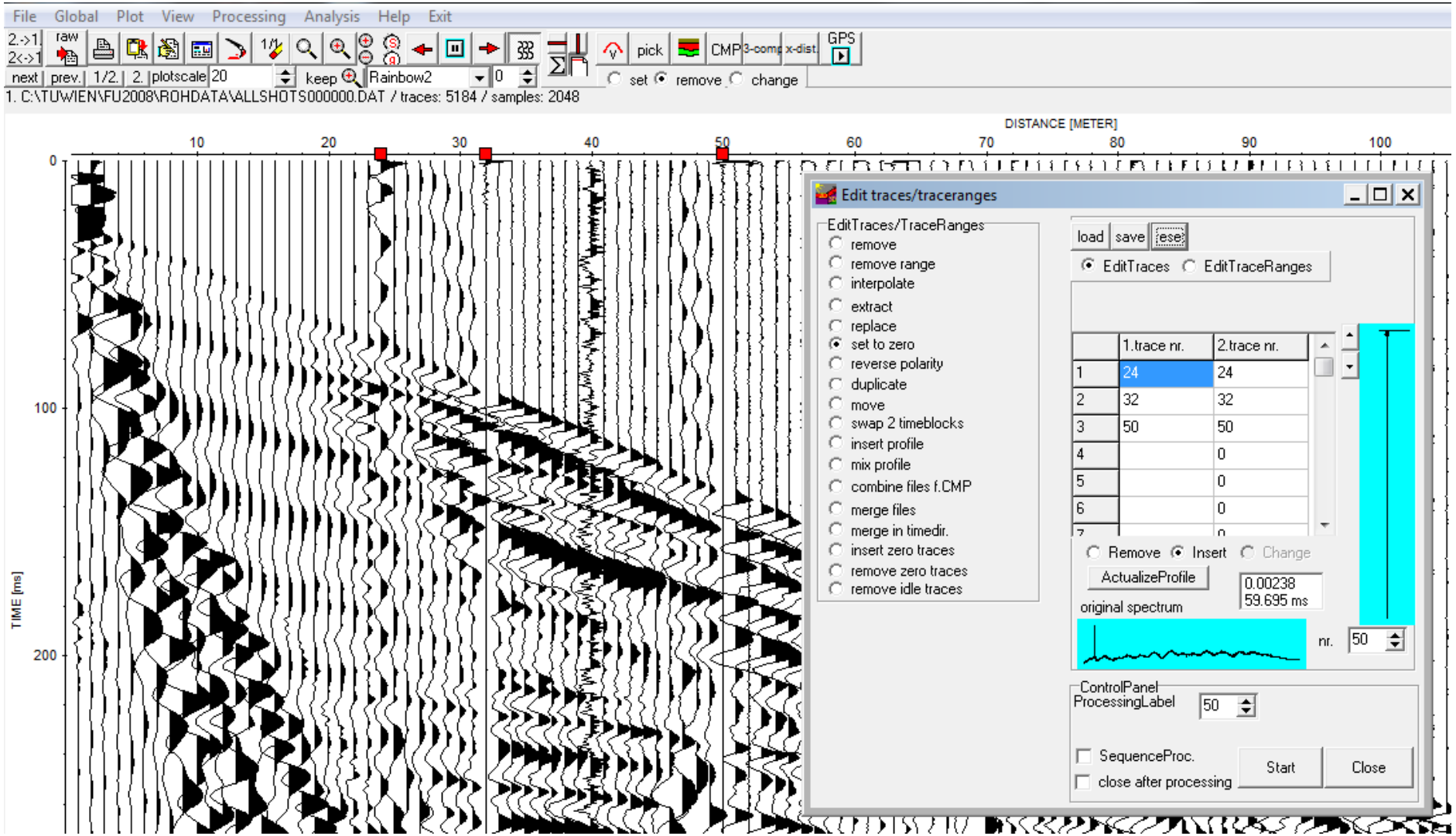

1. C:\TUWIEN\FU2008\ROHDATA\ALLSHOTS000000.DAT / traces: 5184 / samples: 2048
2. C:\TUWIEN\FU2008\PROCDATA\ALLSHOTS000000.01T / traces: 5184 / samples: 2048
DISTANCE [METER]
TIME [ms]
Reflexw - Plot-Options
Plotsettings
Wigglemode
Wiggleattributes
Plotsuboptions
Pointmode attributes
ControlPanel
Help
Close

2->1

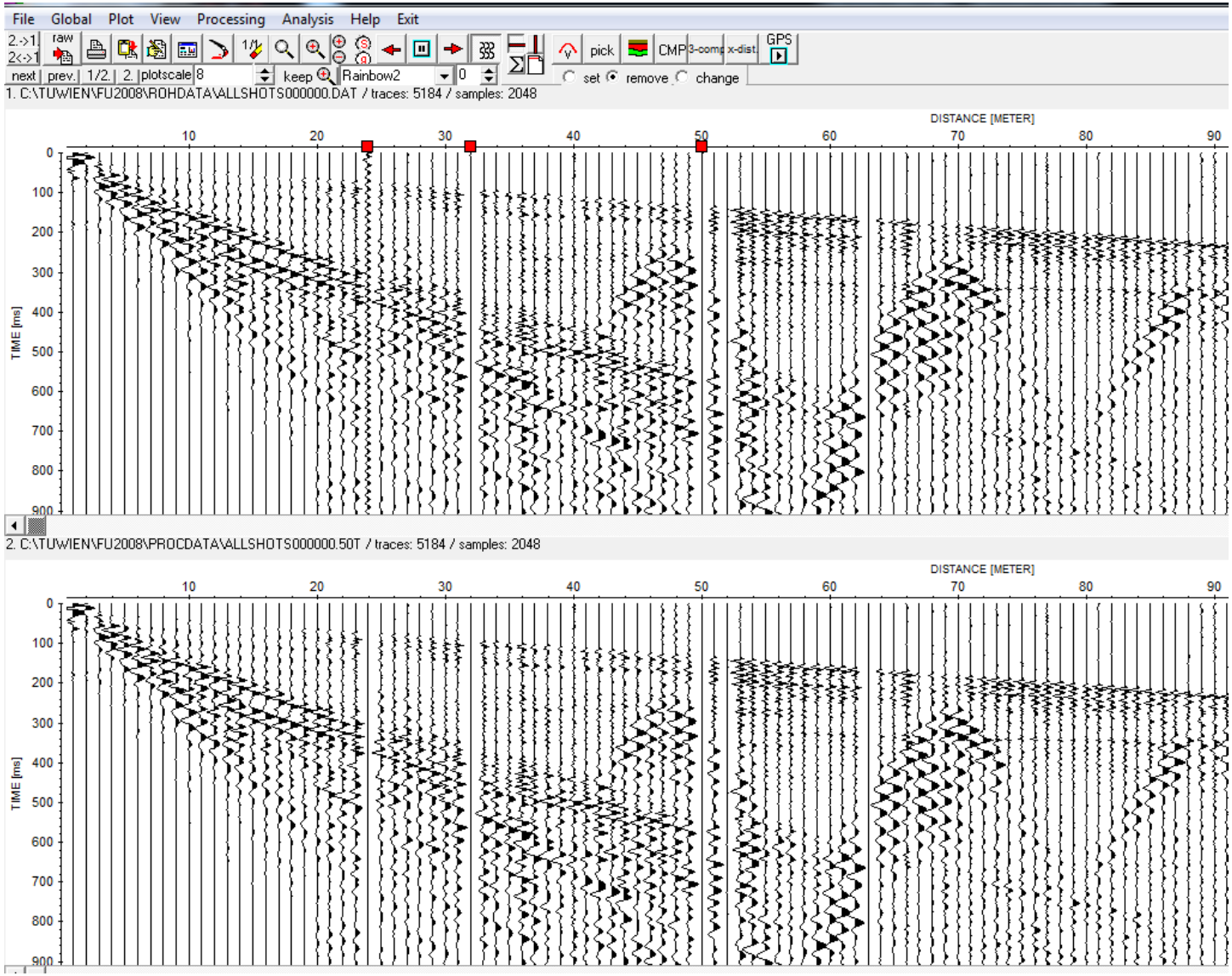
Edit Traces – 2d Filter



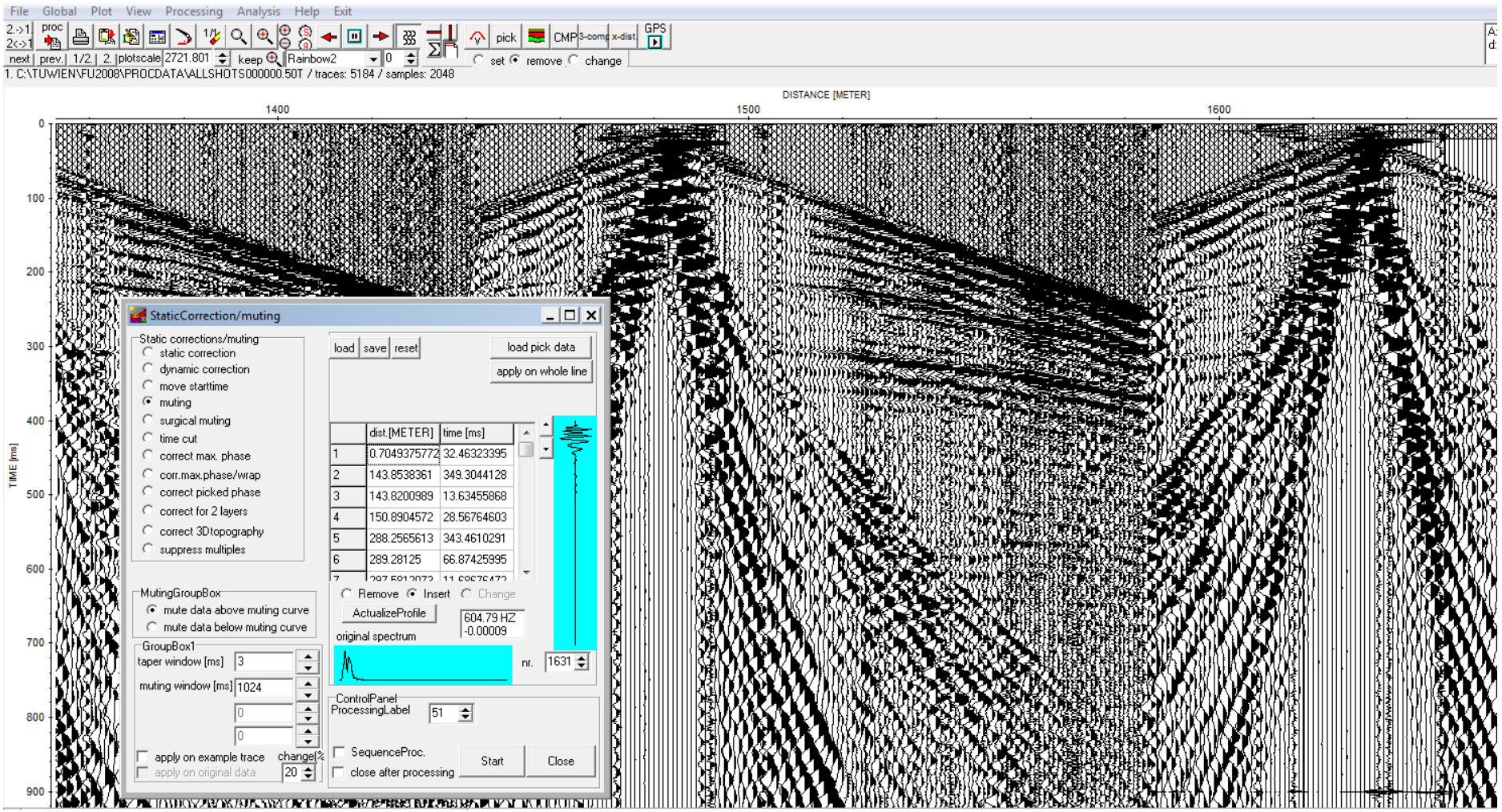
Edit Traces – 2d Filter



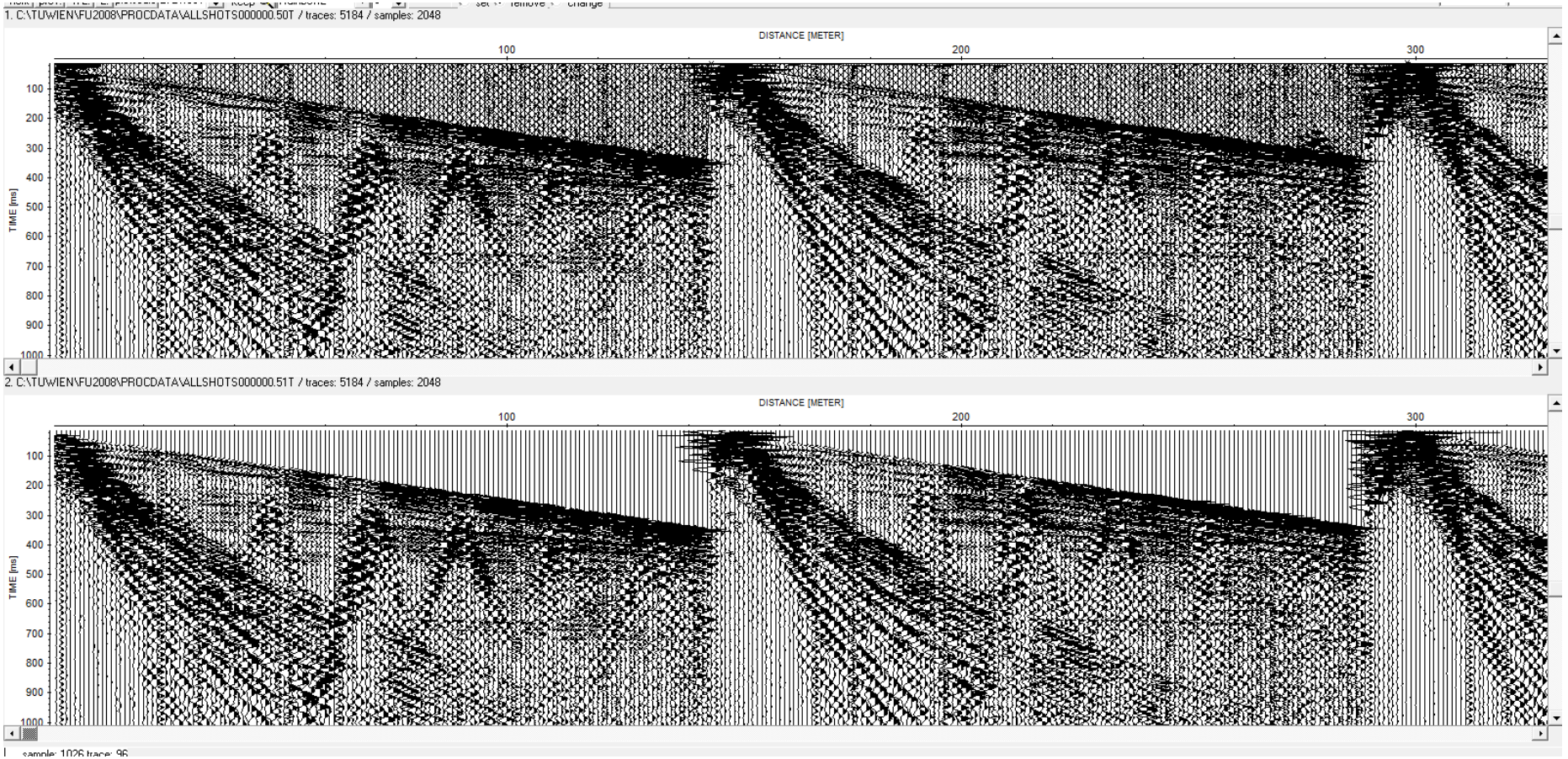
Edit Traces – 2d Filter



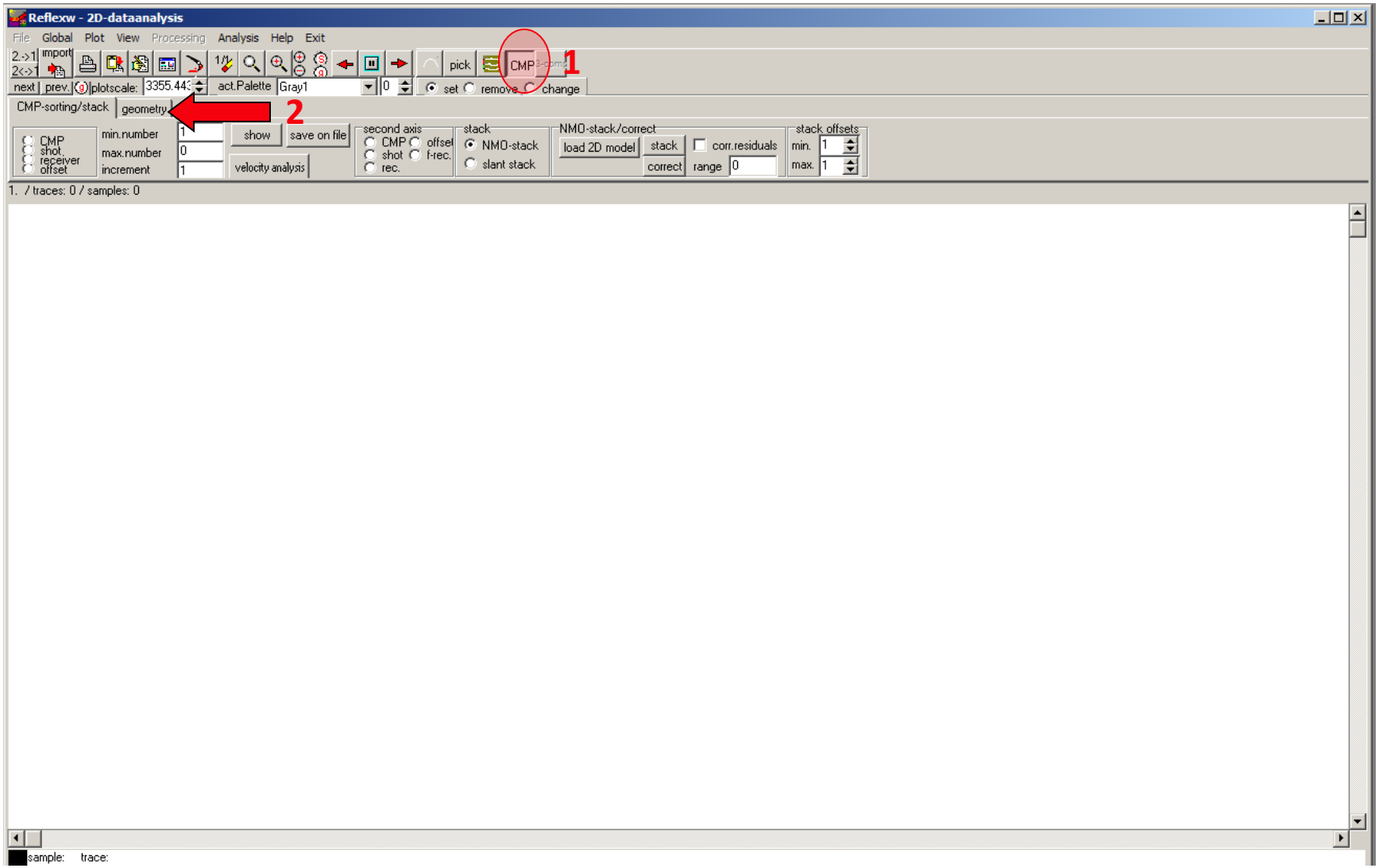
Static correction & Mute - 1d Filter



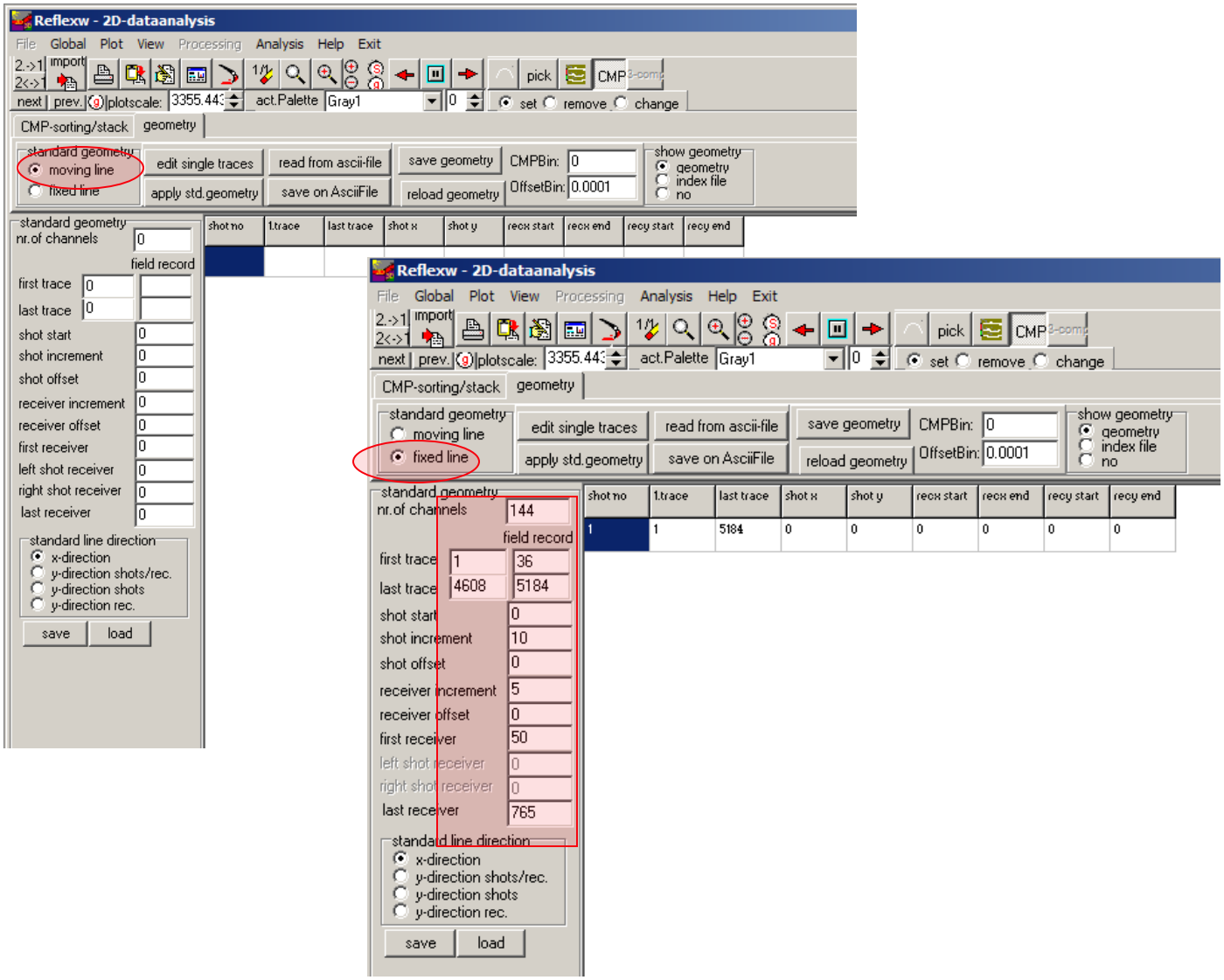
Static correction & Mute - 1d Filter



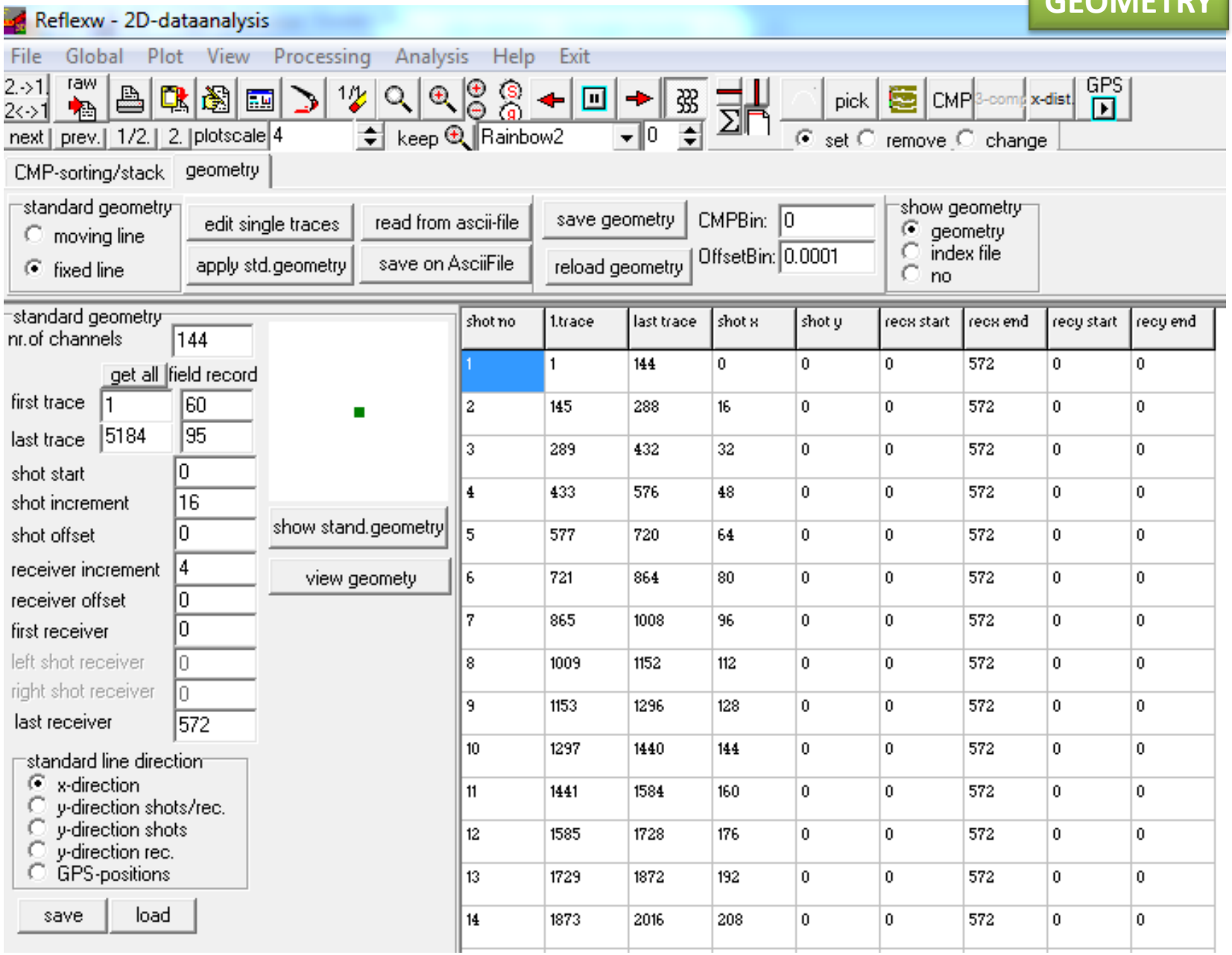
Line Geometry (CMP)



Fixed Line Geometry

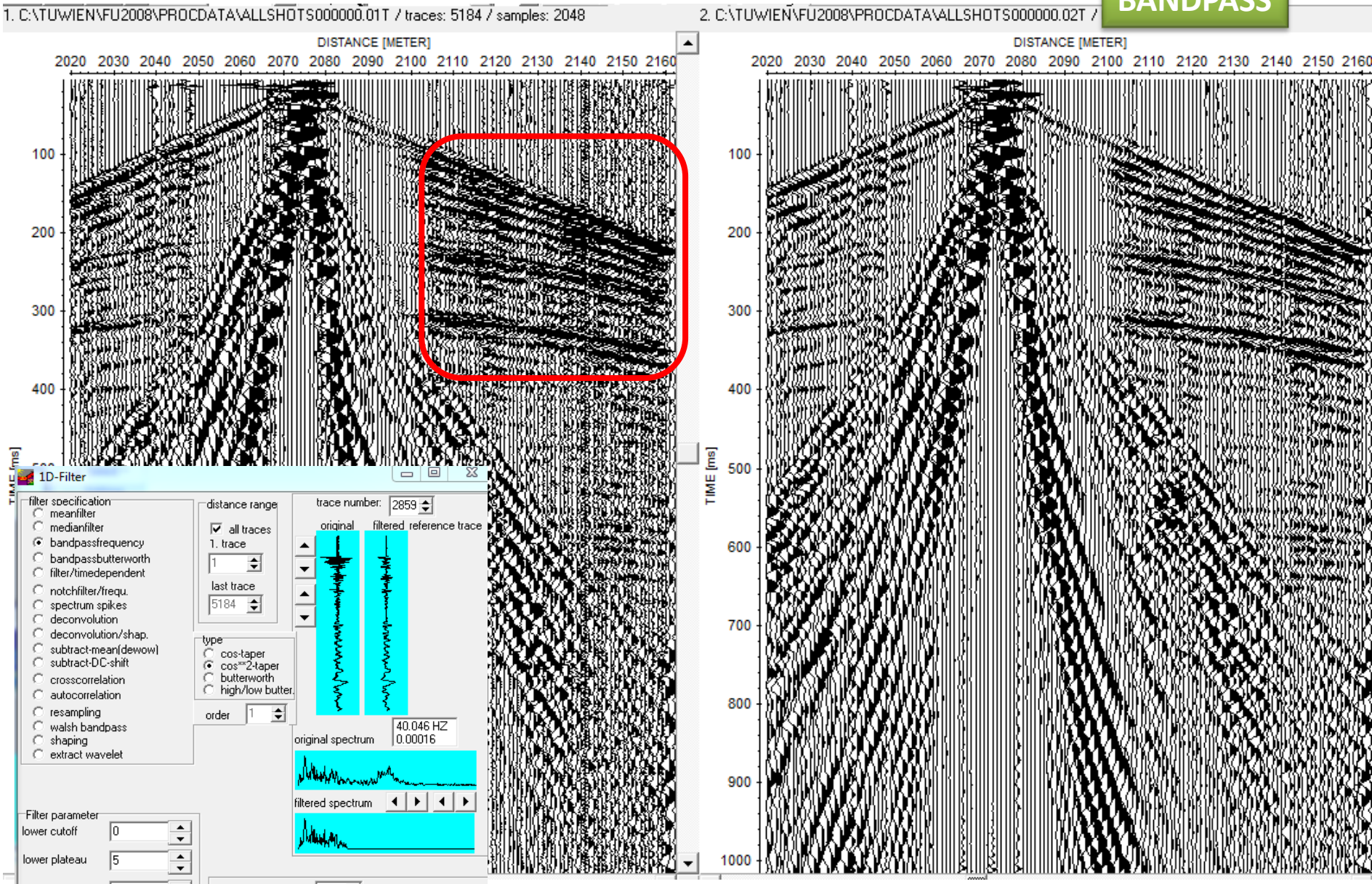


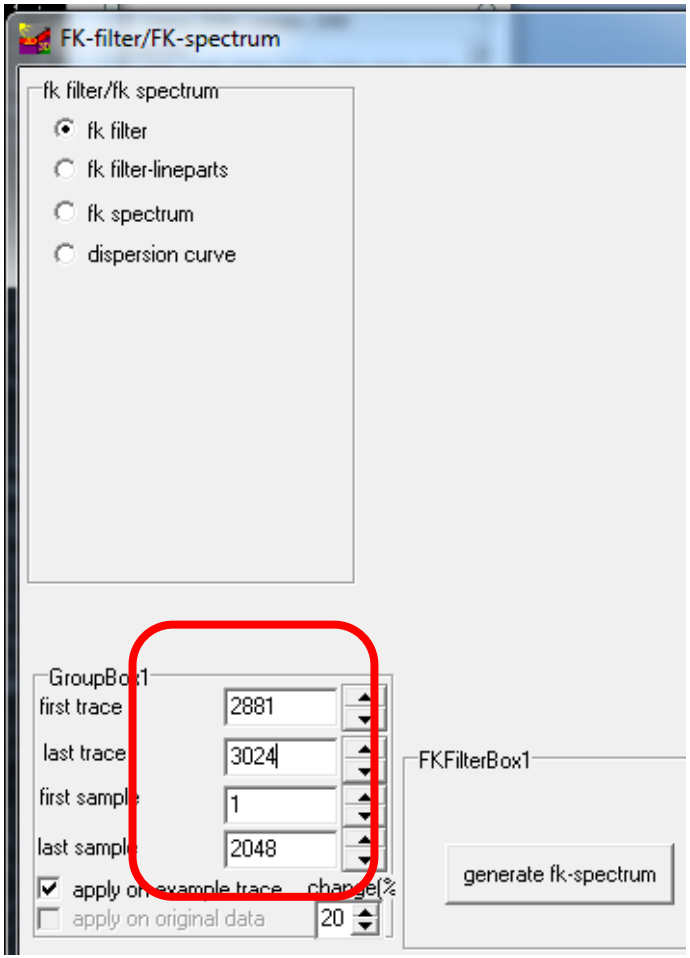
GEOMETRY

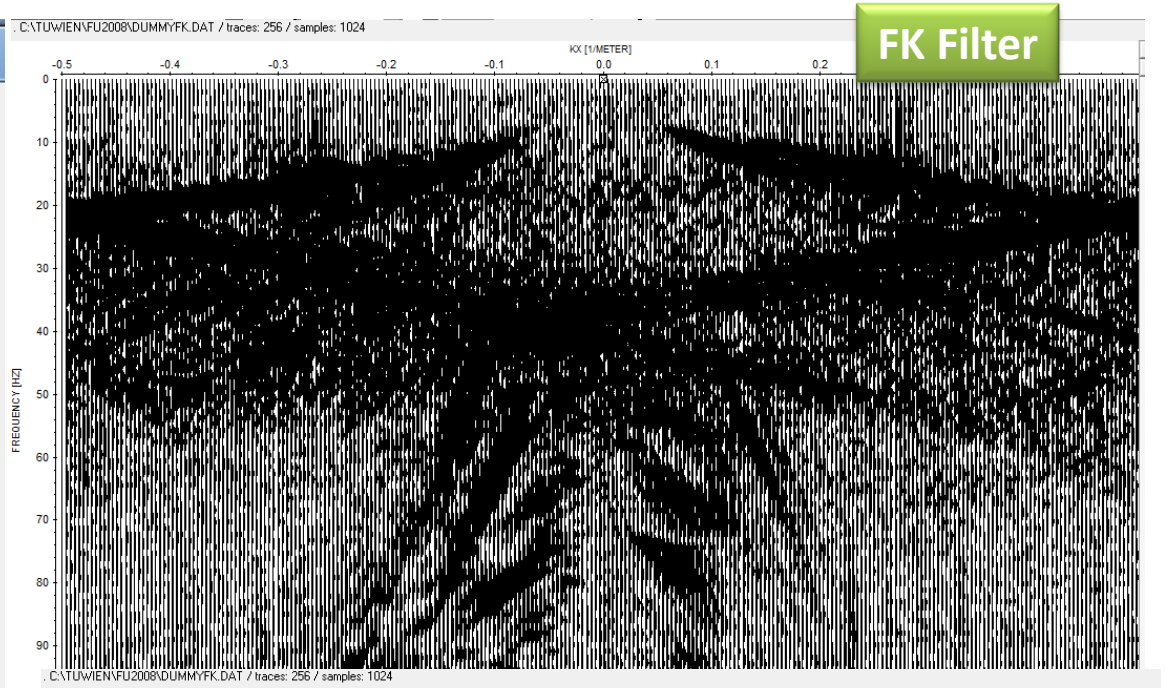


shot no	1.trace	last trace	shot x	shot y	recx start	recx end	recy start	recy end
1	1	144	0	0	0	572	0	0
2	145	288	16	0	0	572	0	0
3	289	432	32	0	0	572	0	0
4	433	576	48	0	0	572	0	0
5	577	720	64	0	0	572	0	0
6	721	864	80	0	0	572	0	0
7	865	1008	96	0	0	572	0	0
8	1009	1152	112	0	0	572	0	0
9	1153	1296	128	0	0	572	0	0
10	1297	1440	144	0	0	572	0	0
11	1441	1584	160	0	0	572	0	0
12	1585	1728	176	0	0	572	0	0
13	1729	1872	192	0	0	572	0	0
14	1873	2016	208	0	0	572	0	0

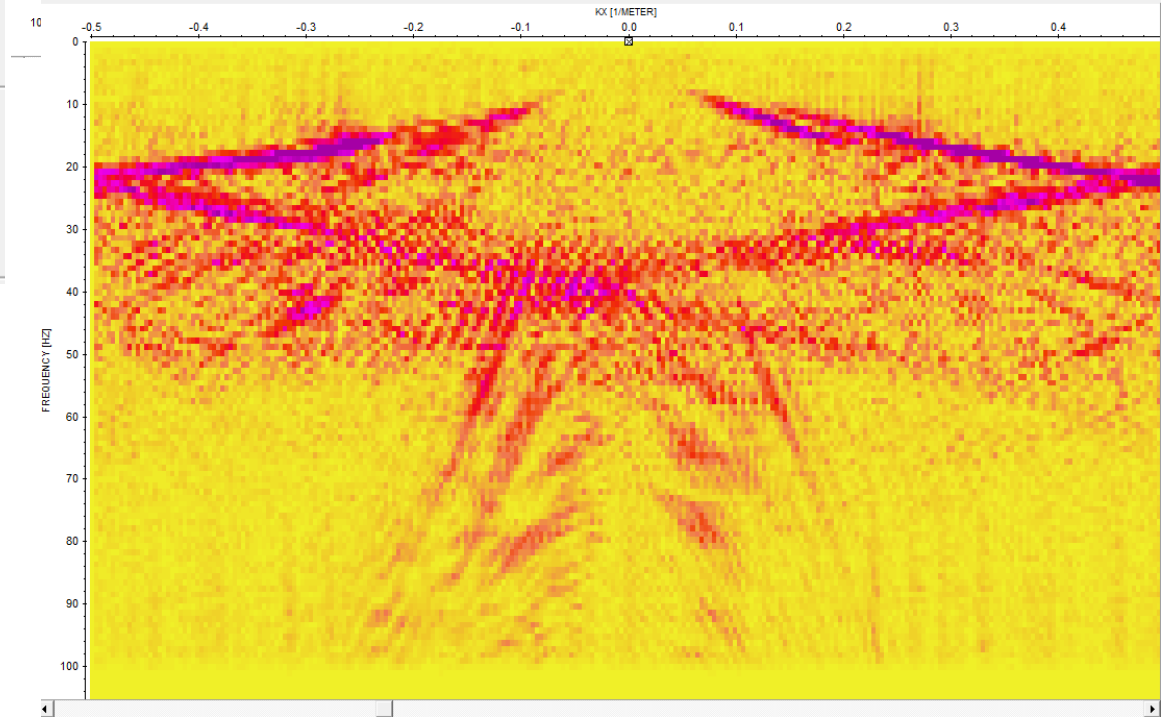
BANDPASS

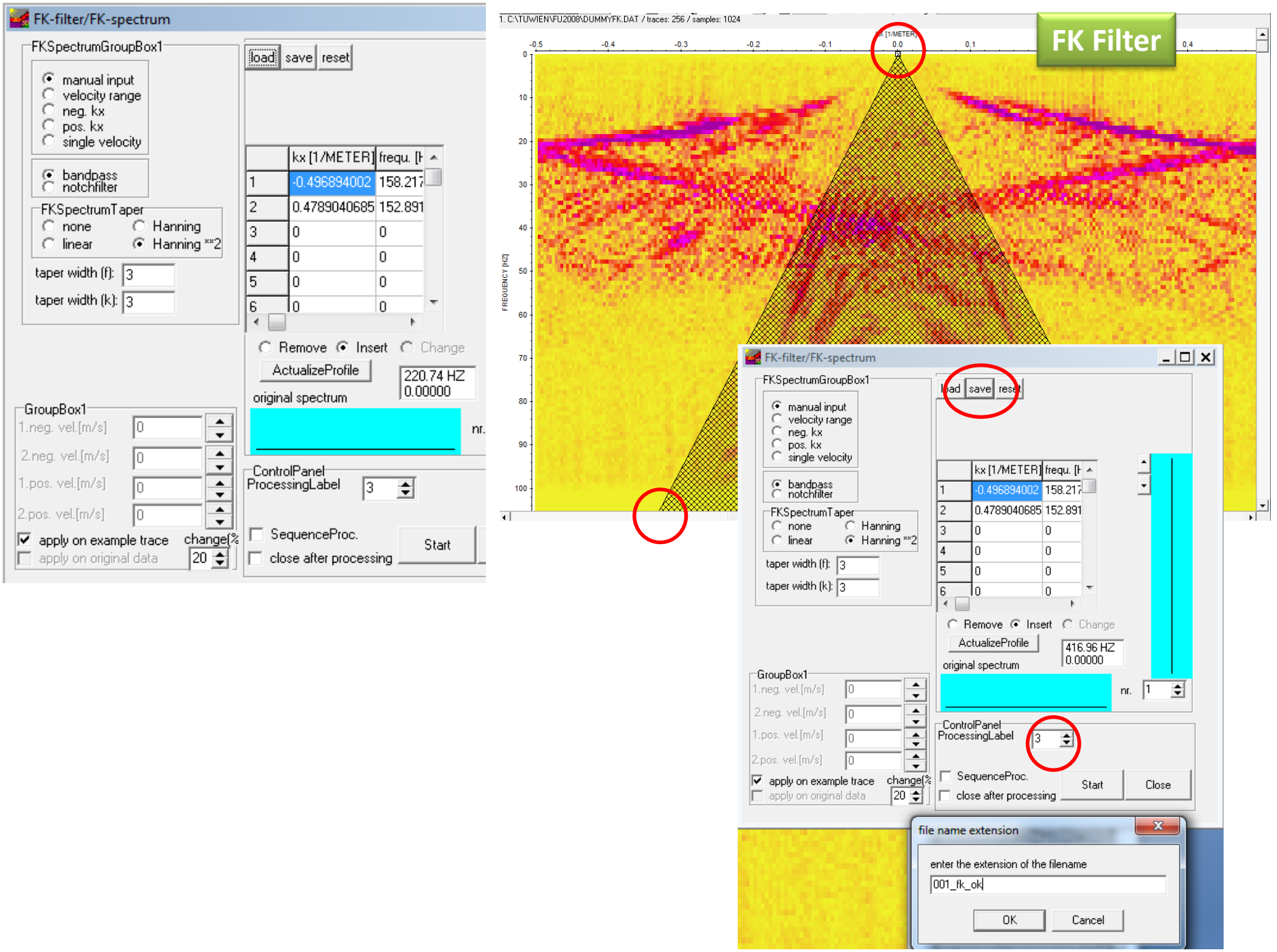

1. C:\TUWIEN\FU2008\PROCDATA\ALLSHOTS000000.01T / traces: 5184 / samples: 2048
2. C:\TUWIEN\FU2008\PROCDATA\ALLSHOTS000000.02T /
DISTANCE [METER]
2020 2030 2040 2050 2060 2070 2080 2090 2100 2110 2120 2130 2140 2150 2160
100 200 300 400 500 600 700 800 900 1000
TIME [ms]
1D-Filter
filter specification
meanfilter
medianfilter
bandpassfrequency
bandpassbutterworth
filter/timedependent
notchfilter/frequ.
spectrum spikes
deconvolution
deconvolution/shap.
subtract-mean(dewow)
subtract-DC-shift
crosscorrelation
autocorrelation
resampling
walsh bandpass
shaping
extract wavelet
distance range
all traces
1. trace
1
last trace
5184
type
cos-taper
cos**2-taper
butterworth
high/low butter.
order
1
trace number:
2859
original
filtered
reference trace
original spectrum
40.046 HZ
0.00016
filtered spectrum
Filter parameter
lower cutoff
0
lower plateau
5
upper plateau
100
upper cutoff
105
Apply on example trace
ProcessingLabel
2
SequenceProc.
close after processing
Start
Close

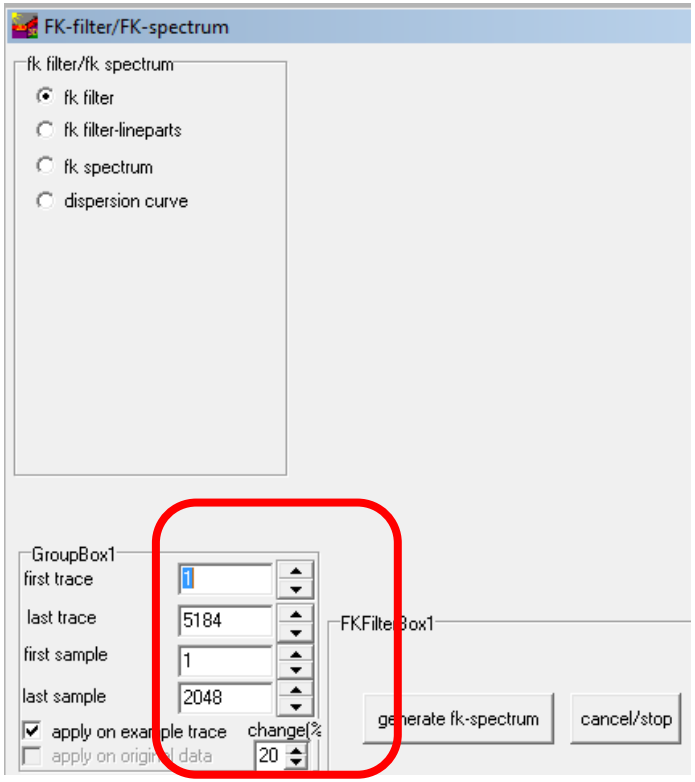

FK-filter/FK-spectrum
fk filter/fk spectrum
fk filter
fk filter-lineparts
fk spectrum
dispersion curve
GroupBox1
first trace
2881
last trace
3024
first sample
1
last sample
2048
apply on example trace
apply on original data
change[%]
20
FKFilterBox1
generate fk-spectrum

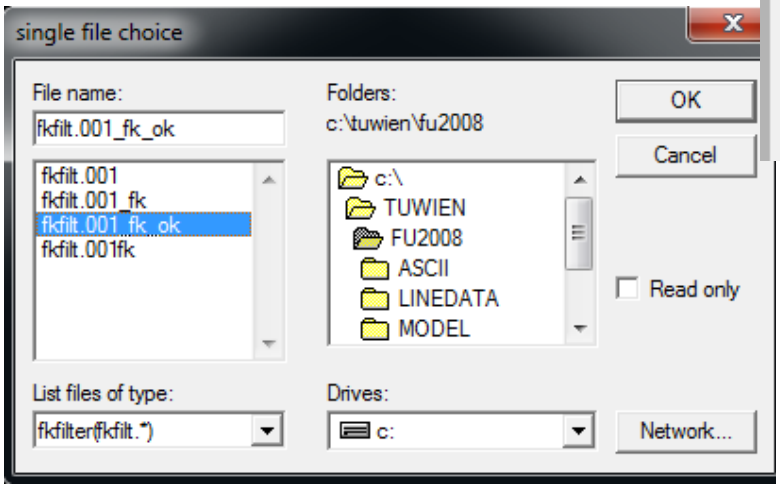

. C:\TUWIEN\FU2008\DUMMYFK.DAT / traces: 256 / samples: 1024
KX [1/METER]
FREQUENCY [HZ]

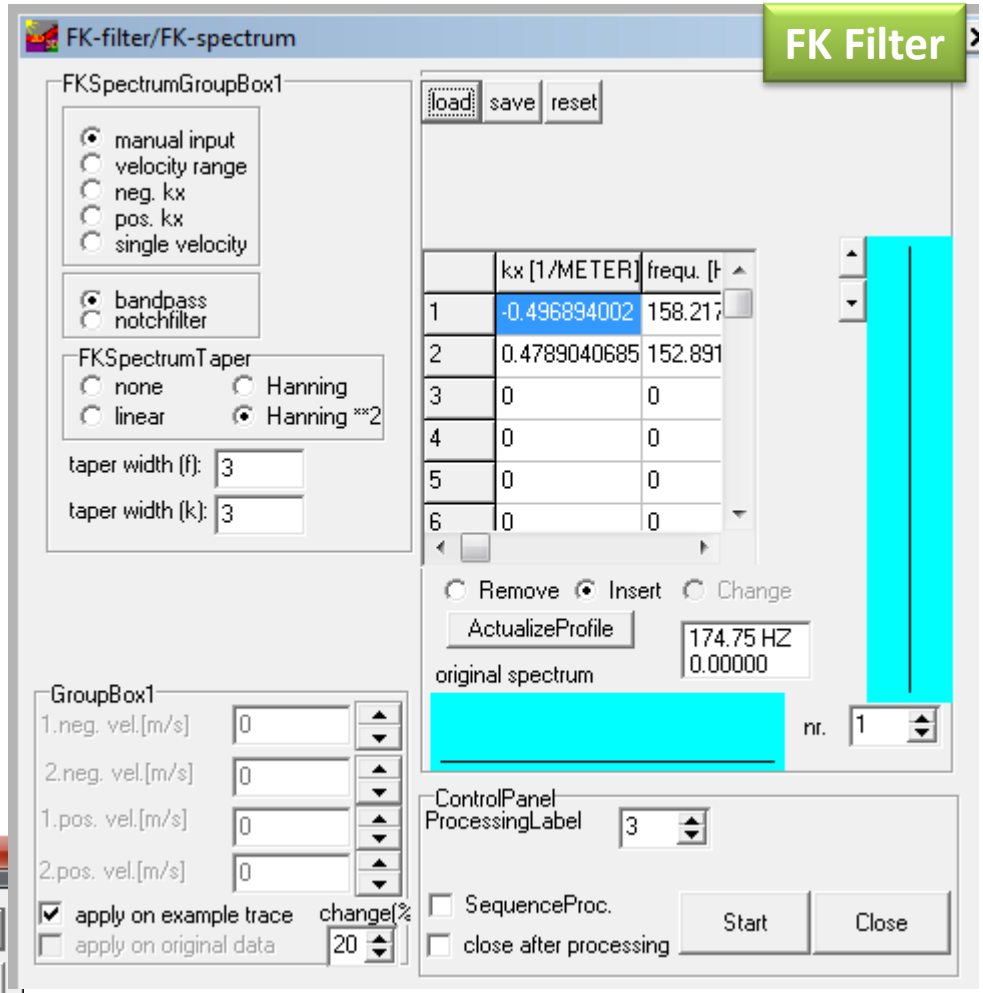
FK Filter

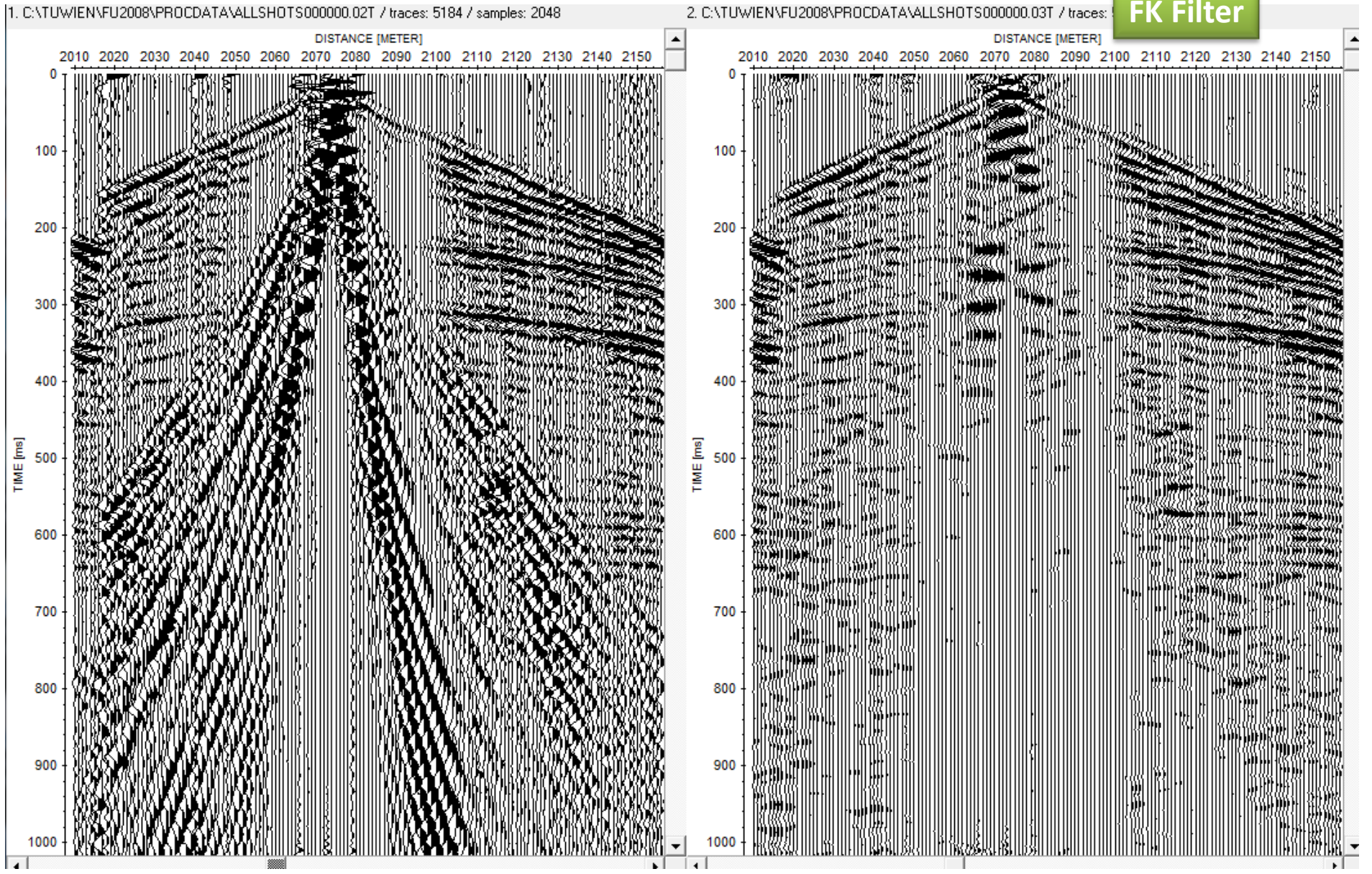

. C:\TUWIEN\FU2008\DUMMYFK.DAT / traces: 256 / samples: 1024
KX [1/METER]
FREQUENCY [HZ]

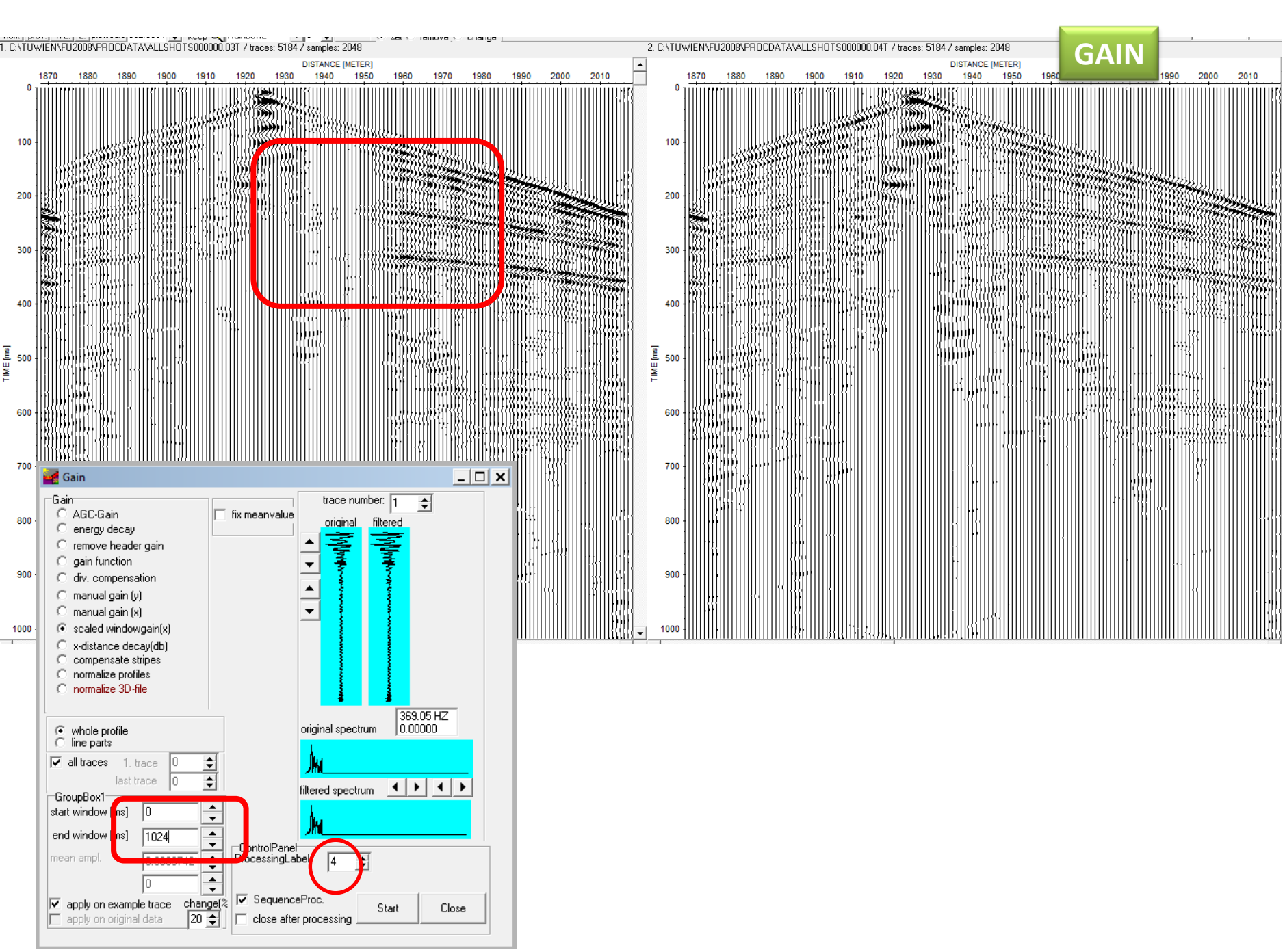

FK-filter/FK-spectrum
FKSpectrumGroupBox1
manual input
velocity range
neg. kx
pos. kx
single velocity
bandpass
notchfilter
FKSpectrumTaper
none
linear
Hanning
Hanning **2
taper width (f): 3
taper width (k): 3
load
save
reset
kx [1/METER]
frequ. [H
1 -0.496894002 158.217
2 0.4789040685 152.891
3 0 0
4 0 0
5 0 0
6 0 0
Remove
Insert
Change
ActualizeProfile
220.74 HZ
0.00000
original spectrum
nr.
GroupBox1
1.neg. vel.[m/s] 0
2.neg. vel.[m/s] 0
1.pos. vel.[m/s] 0
2.pos. vel.[m/s] 0
apply on example trace
apply on original data
change[%
20
ControlPanel
ProcessingLabel
3
SequenceProc.
close after processing
Start
FK Filter
1. C:\TUWIEN\FU2008\DUMMYFK.DAT / traces: 256 / samples: 1024
FREQUENCY [HZ]
-0.5
-0.4
-0.3
-0.2
-0.1
0.0
0.1
0.4
0
10
20
30
40
50
60
70
80
90
100
FK-filter/FK-spectrum
FKSpectrumGroupBox1
manual input
velocity range
neg. kx
pos. kx
single velocity
bandpass
notchfilter
FKSpectrumTaper
none
linear
Hanning
Hanning **2
taper width (f): 3
taper width (k): 3
load
save
reset
kx [1/METER]
frequ. [H
1 -0.496894002 158.217
2 0.4789040685 152.891
3 0 0
4 0 0
5 0 0
6 0 0
Remove
Insert
Change
ActualizeProfile
416.96 HZ
0.00000
original spectrum
nr. 1
GroupBox1
1.neg. vel.[m/s] 0
2.neg. vel.[m/s] 0
1.pos. vel.[m/s] 0
2.pos. vel.[m/s] 0
apply on example trace
apply on original data
change[%
20
ControlPanel
ProcessingLabel
3
SequenceProc.
close after processing
Start
Close
file name extension
enter the extension of the filename
001_fk_ok
OK
Cancel


FK-filter/FK-spectrum
fk filter/fk spectrum
fk filter
fk filter-lineparts
fk spectrum
dispersion curve
GroupBox1
first trace
1
last trace
5184
first sample
1
last sample
2048
apply on example trace
apply on original data
change(%
20
FKFilterBox1
generate fk-spectrum
cancel/stop

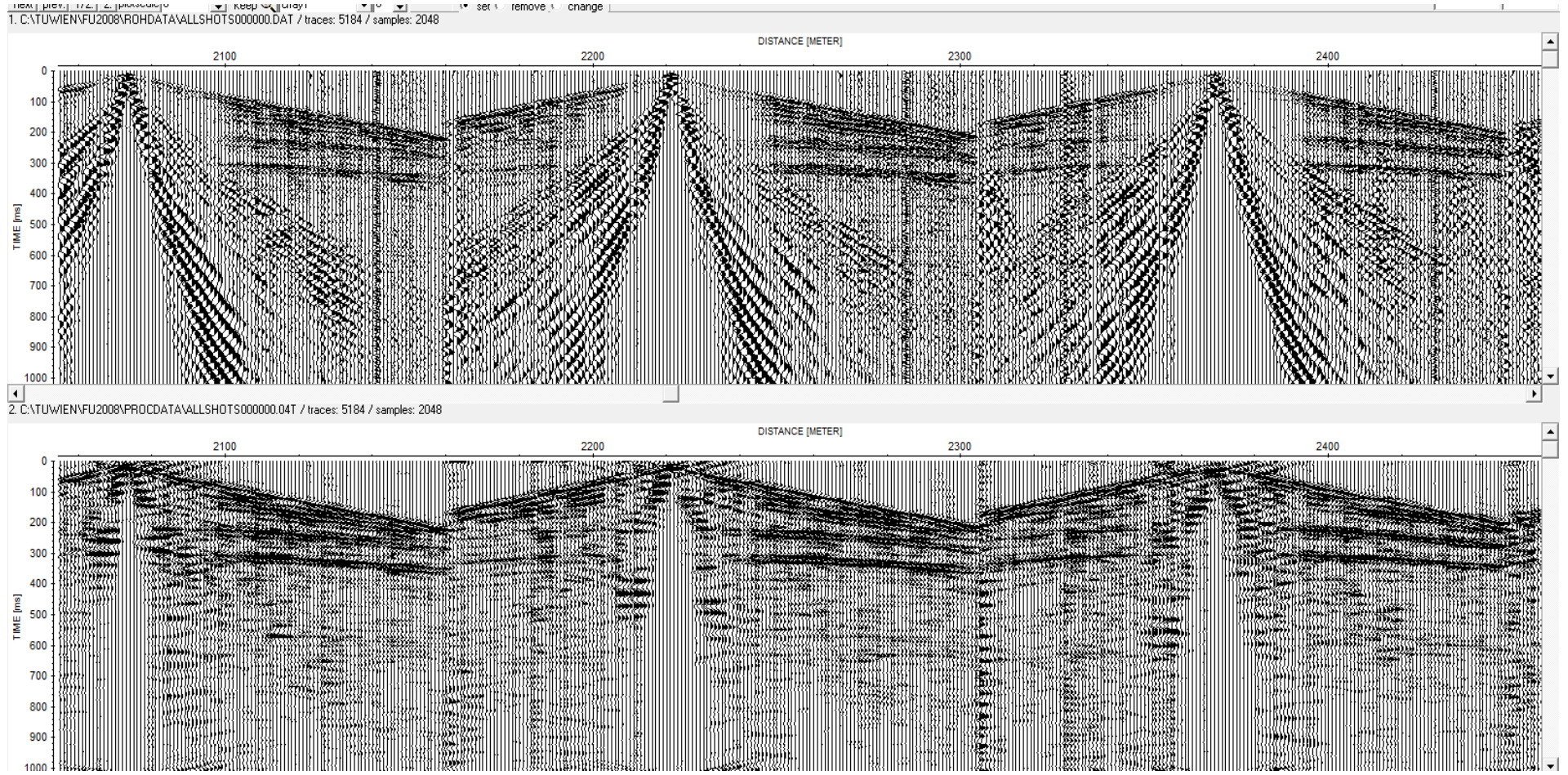

single file choice
File name:
fkfilt.001_fk_ok
Folders:
c:\tuwien\fu2008
OK
Cancel
fkfilt.001
fkfilt.001_fk
fkfilt.001_fk_ok
fkfilt.001fk
c:\
TUWIEN
FU2008
ASCII
LINEDATA
MODEL
Read only
List files of type:
fkfilter(fkfilt.*)
Drives:
c:
Network...

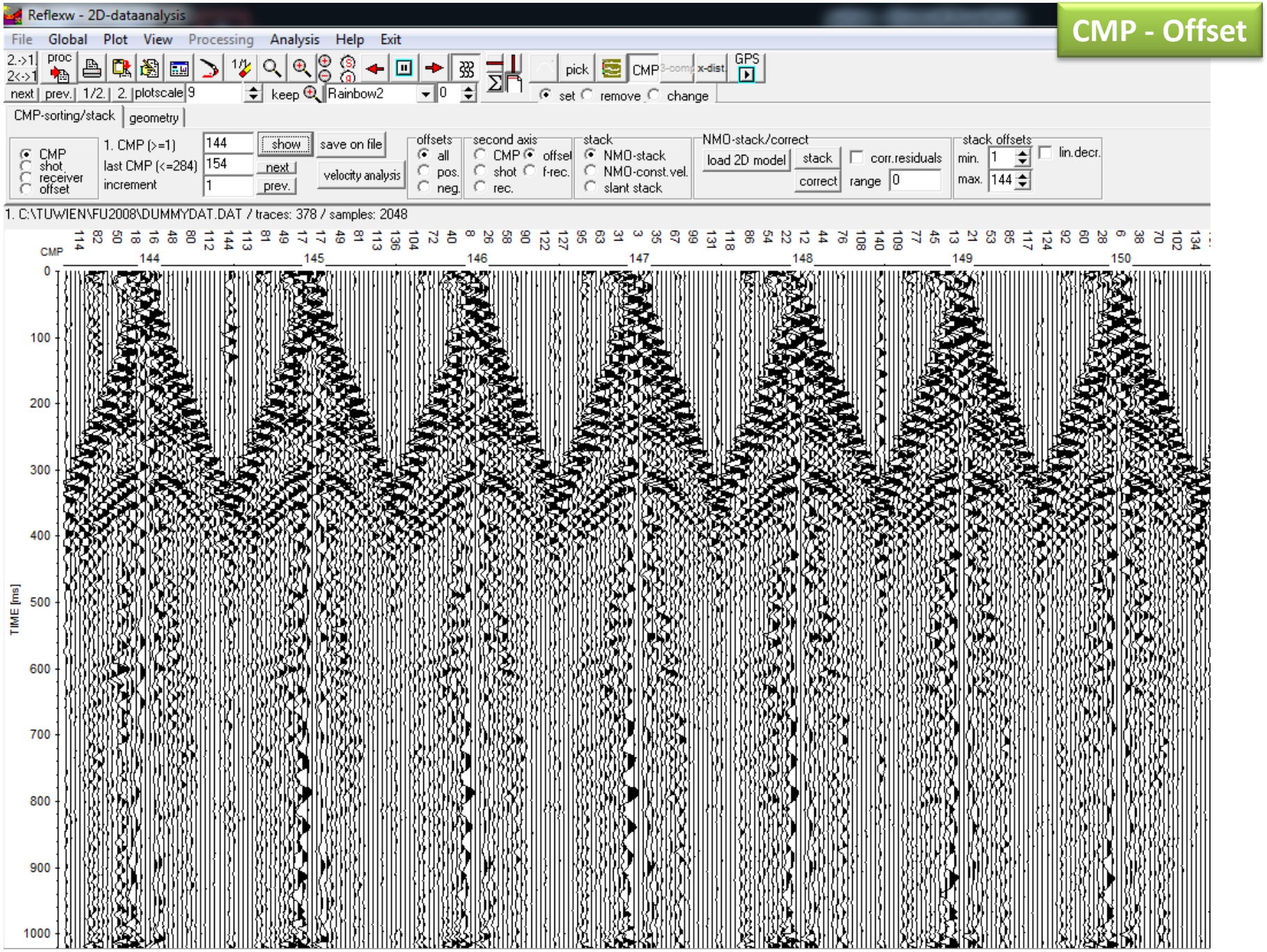

FK-filter/FK-spectrum
FK Filter
FKSpectrumGroupBox1
manual input
velocity range
neg. kx
pos. kx
single velocity
bandpass
notchfilter
FKSpectrumTaper
none
linear
Hanning
Hanning **2
taper width (f):
3
taper width (k):
3
load
save
reset
kx [1/METER]
frequ. [H
1
-0.496894002
158.217
2
0.4789040685
152.891
3
0
0
4
0
0
5
0
0
6
0
0
Remove
Insert
Change
ActualizeProfile
174.75 HZ
0.00000
original spectrum
nr.
1
GroupBox1
1.neg. vel.[m/s]
2.neg. vel.[m/s]
1.pos. vel.[m/s]
2.pos. vel.[m/s]
0
apply on example trace
apply on original data
change(%
20
ControlPanel
ProcessingLabel
3
SequenceProc.
close after processing
Start
Close


FK Filter
1. C:\TUWIEN\FU2008\PROCDATA\ALLSHOTS000000.02T / traces: 5184 / samples: 2048
2. C:\TUWIEN\FU2008\PROCDATA\ALLSHOTS000000.03T / traces:
DISTANCE [METER]
2010 2020 2030 2040 2050 2060 2070 2080 2090 2100 2110 2120 2130 2140 2150
TIME [ms]
0 100 200 300 400 500 600 700 800 900 1000

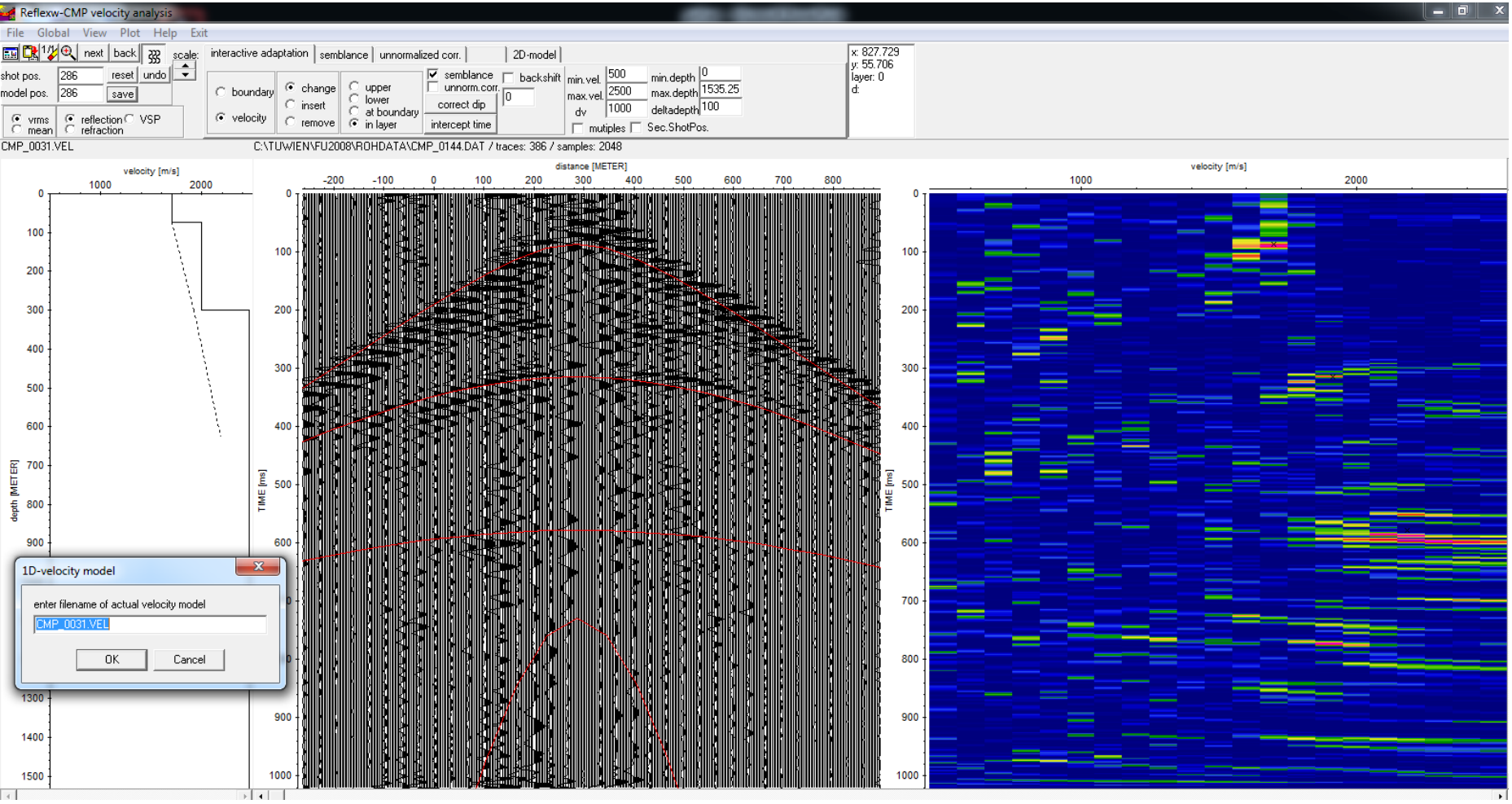

GAIN
1. C:\TUWIEN\FU2008\PROCDATA\ALLSHOTS000000.03T / traces: 5184 / samples: 2048
2. C:\TUWIEN\FU2008\PROCDATA\ALLSHOTS000000.04T / traces: 5184 / samples: 2048
DISTANCE [METER]
TIME [ms]
Gain
AGC-Gain
energy decay
remove header gain
gain function
div. compensation
manual gain (y)
manual gain (x)
scaled windowgain(x)
x-distance decay(db)
compensate stripes
normalize profiles
normalize 3D-file
fix meanvalue
trace number:
original
filtered
original spectrum
369.05 HZ
0.00000
filtered spectrum
whole profile
line parts
all traces
1. trace
last trace
GroupBox1
start window [ms]
end window [ms]
mean ampl.
ControlPanel ProcessingLabel
apply on example trace
apply on original data
change[%
SequenceProc.
close after processing
Start
Close

RAW DATA – Filtered DATA

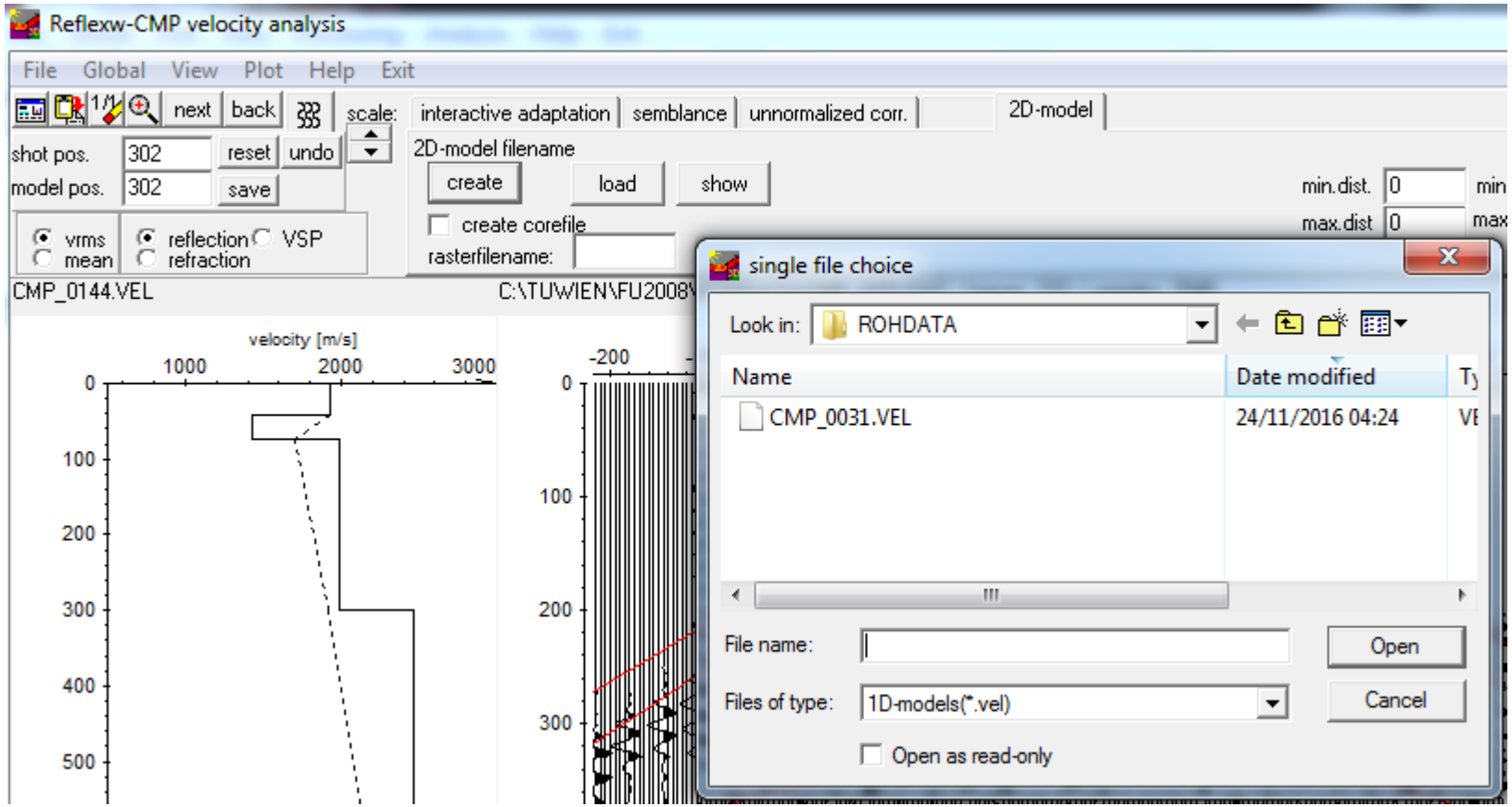


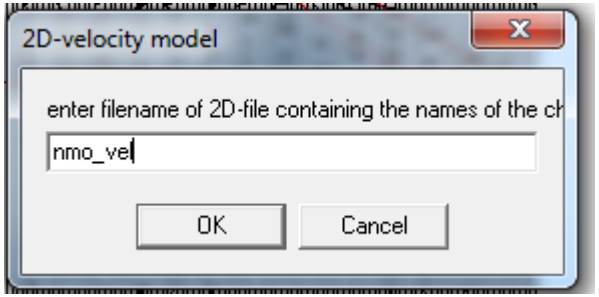

Reflexw - 2D-dataanalysis
CMP - Offset
File Global Plot View Processing Analysis Help Exit
2.->1 2<-1 proc next prev. 1/2. 2. plotscale 9 keep Rainbow2 0 pick CMP x-dist. GPS set remove change
CMP-sorting/stack geometry
CMP shot receiver offset
1. CMP (>=1) 144 show save on file
last CMP (<=284) 154 next
increment 1 prev.
velocity analysis
offsets all pos. neg.
second axis CMP shot rec. offset f-rec.
stack NMO-stack NMO-const.vel. slant stack
NMO-stack/correct load 2D model stack correct corr.residuals range 0
stack offsets min. 1 max. 144 lin.decr.
1. C:\TUWIEN\FU2008\DUMMYDAT.DAT / traces: 378 / samples: 2048
CMP
144 145 146 147 148 149 150
TIME [ms]
0 100 200 300 400 500 600 700 800 900 1000

VELOCITY ANALYSIS - Semblance

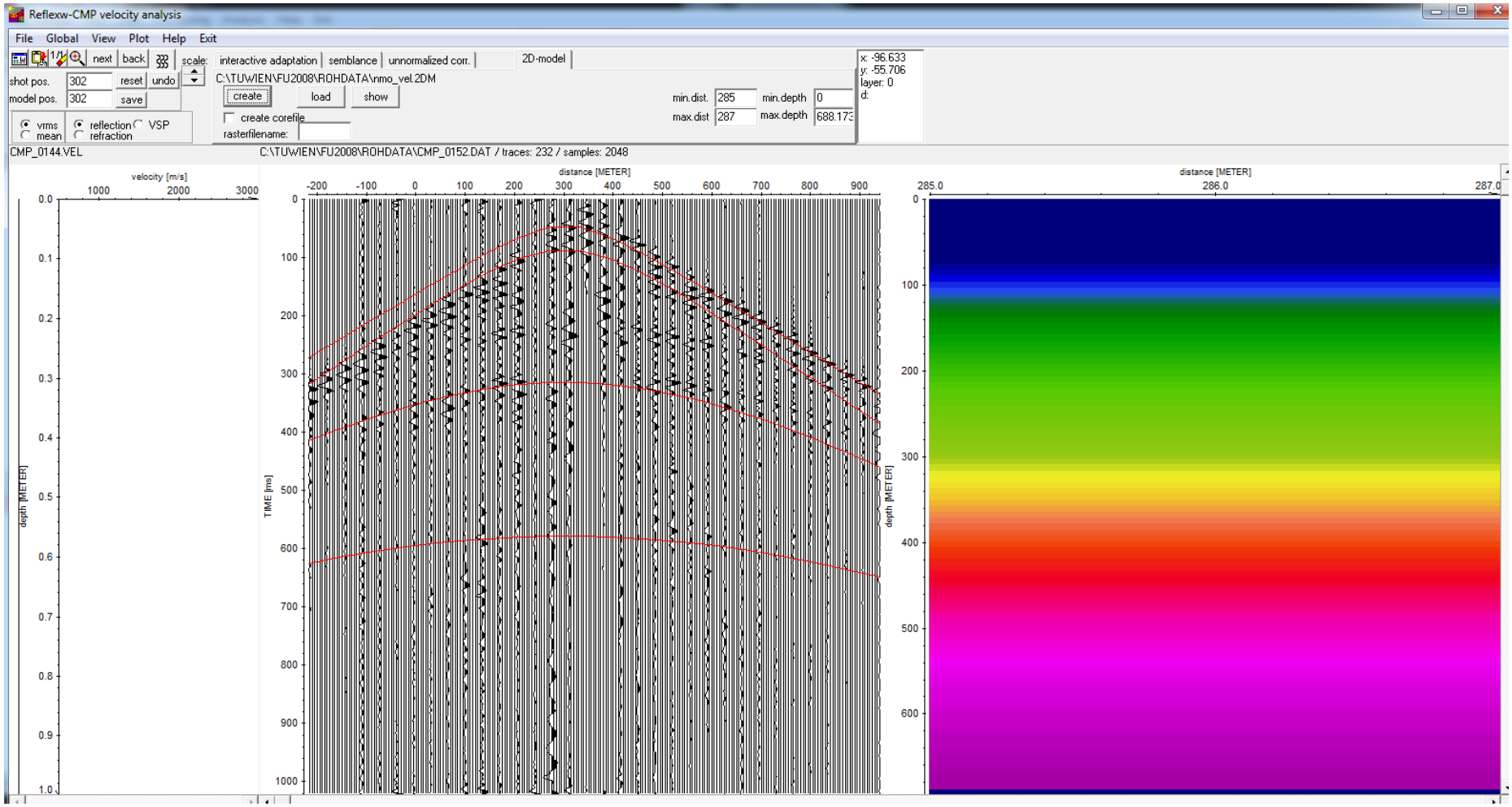


VELOCITY ANALYSIS – Create 2D Velocity File

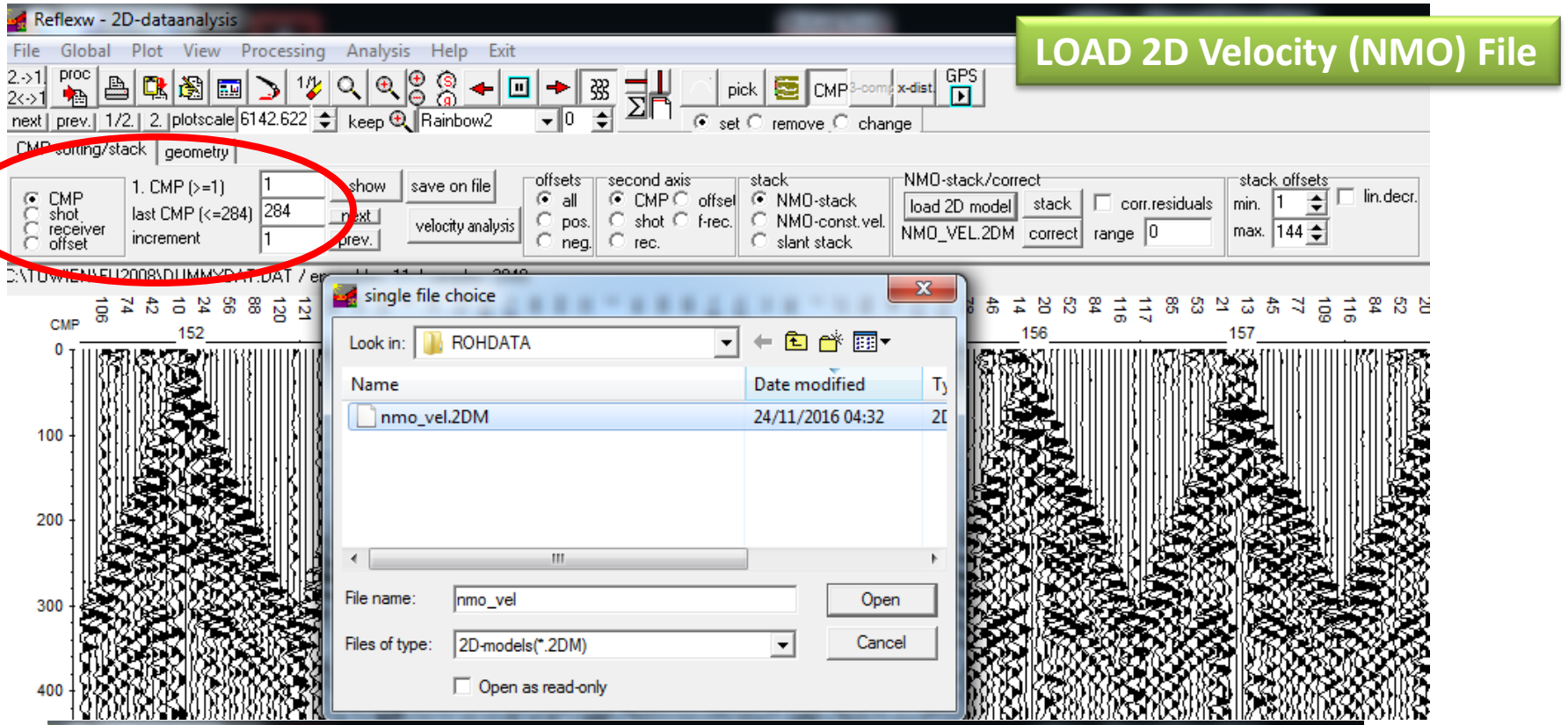


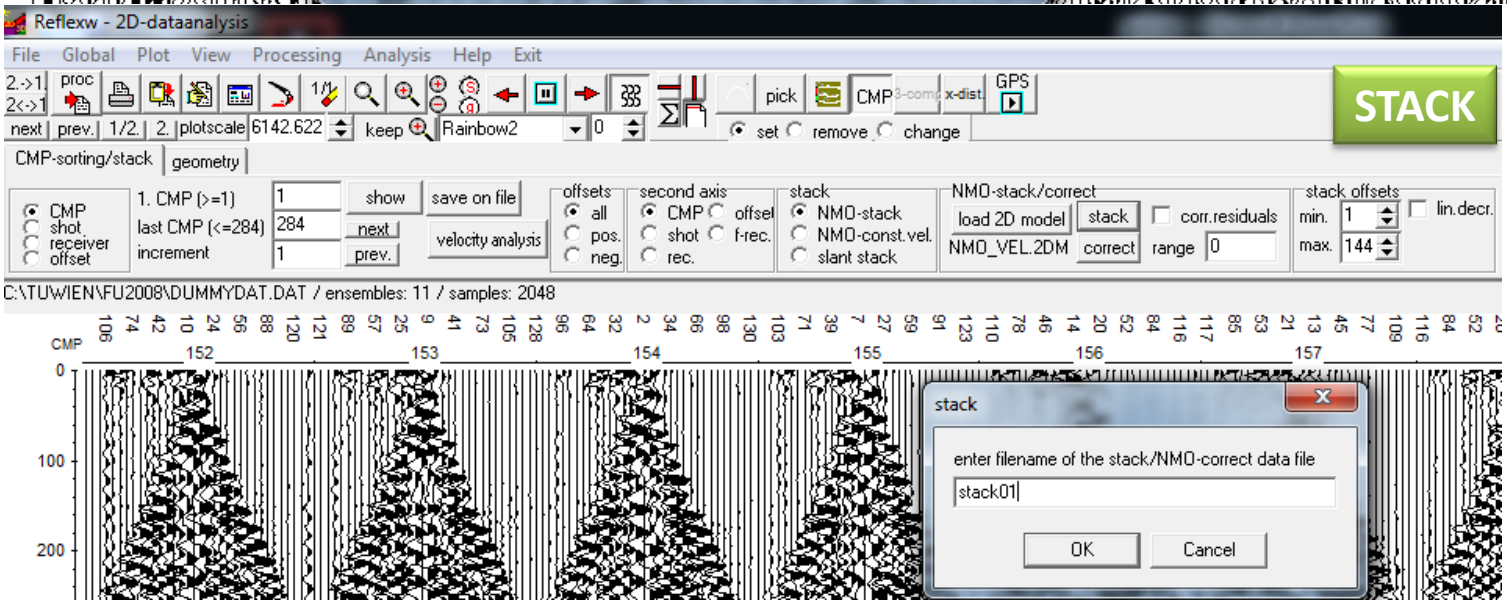


VELOCITY ANALYSIS – Velocity model

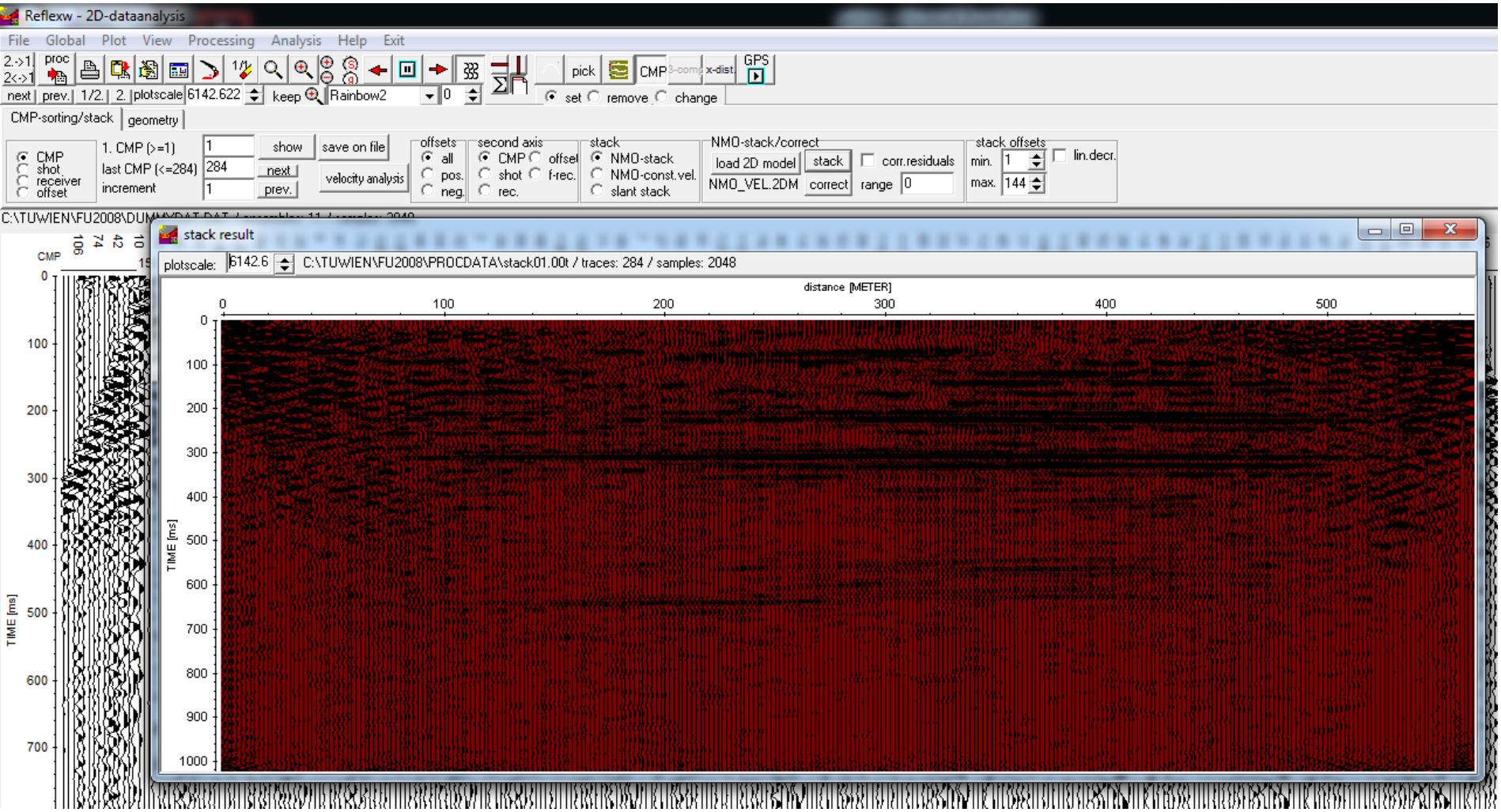


Close window

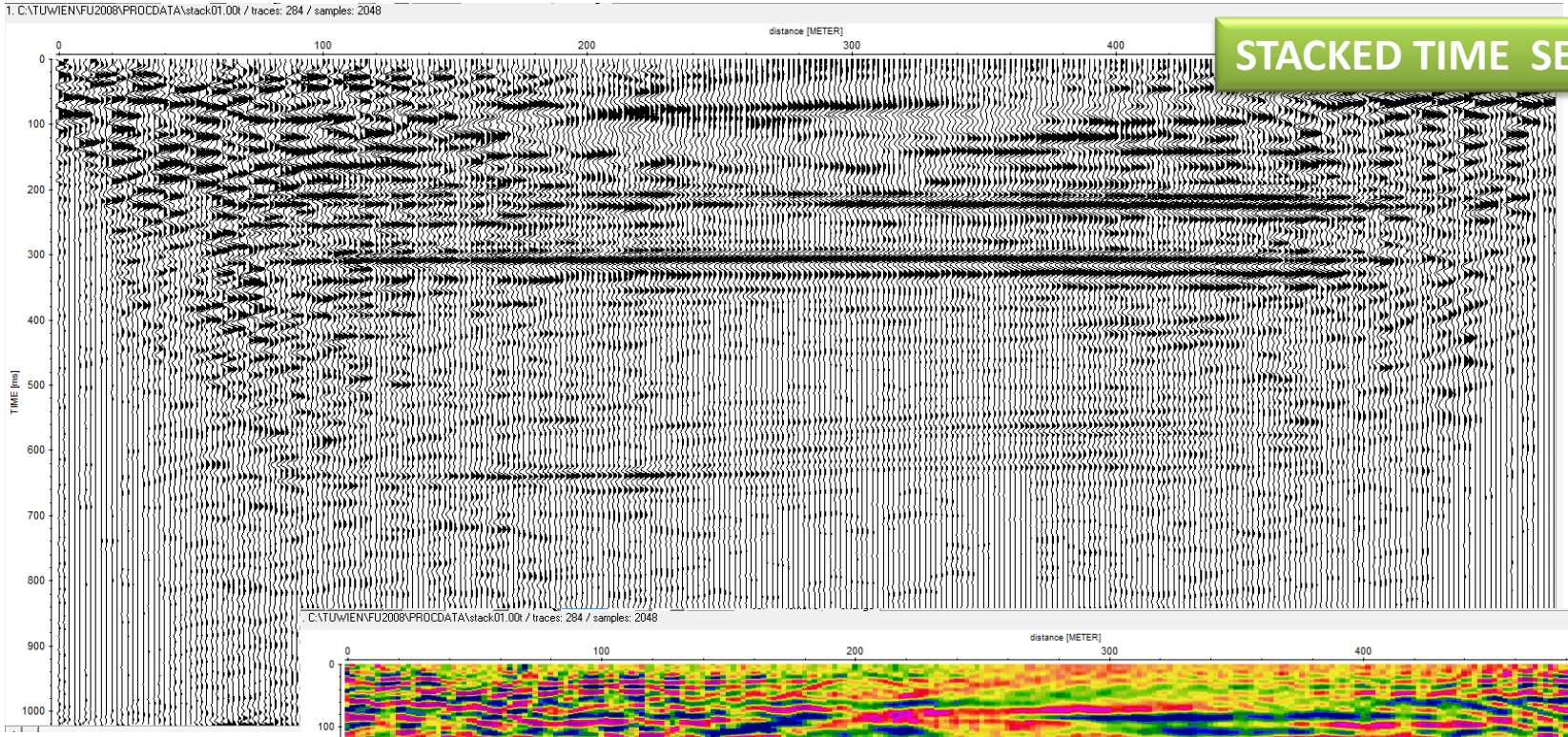

LOAD 2D Velocity (NMO) File
Reflexw - 2D-dataanalysis
File Global Plot View Processing Analysis Help Exit
CMP-sorting/stack
geometry
CMP
shot
receiver
offset
1. CMP (>=1)
last CMP (<=284)
increment
show
save on file
next
prev.
velocity analysis
offsets
all
pos.
neg.
second axis
CMP
shot
rec.
offset
f-rec.
stack
NMO-stack
NMO-const.vel.
slant stack
NMO-stack/correct
load 2D model
NMO_VEL.2DM
stack
correct
corr.residuals
range
stack offsets
min.
max.
lin.decr.
single file choice
Look in:
ROHDATA
Name
Date modified
nmo_vel.2DM
24/11/2016 04:32
File name:
nmo_vel
Files of type:
2D-models(*.2DM)
Open
Cancel
Open as read-only

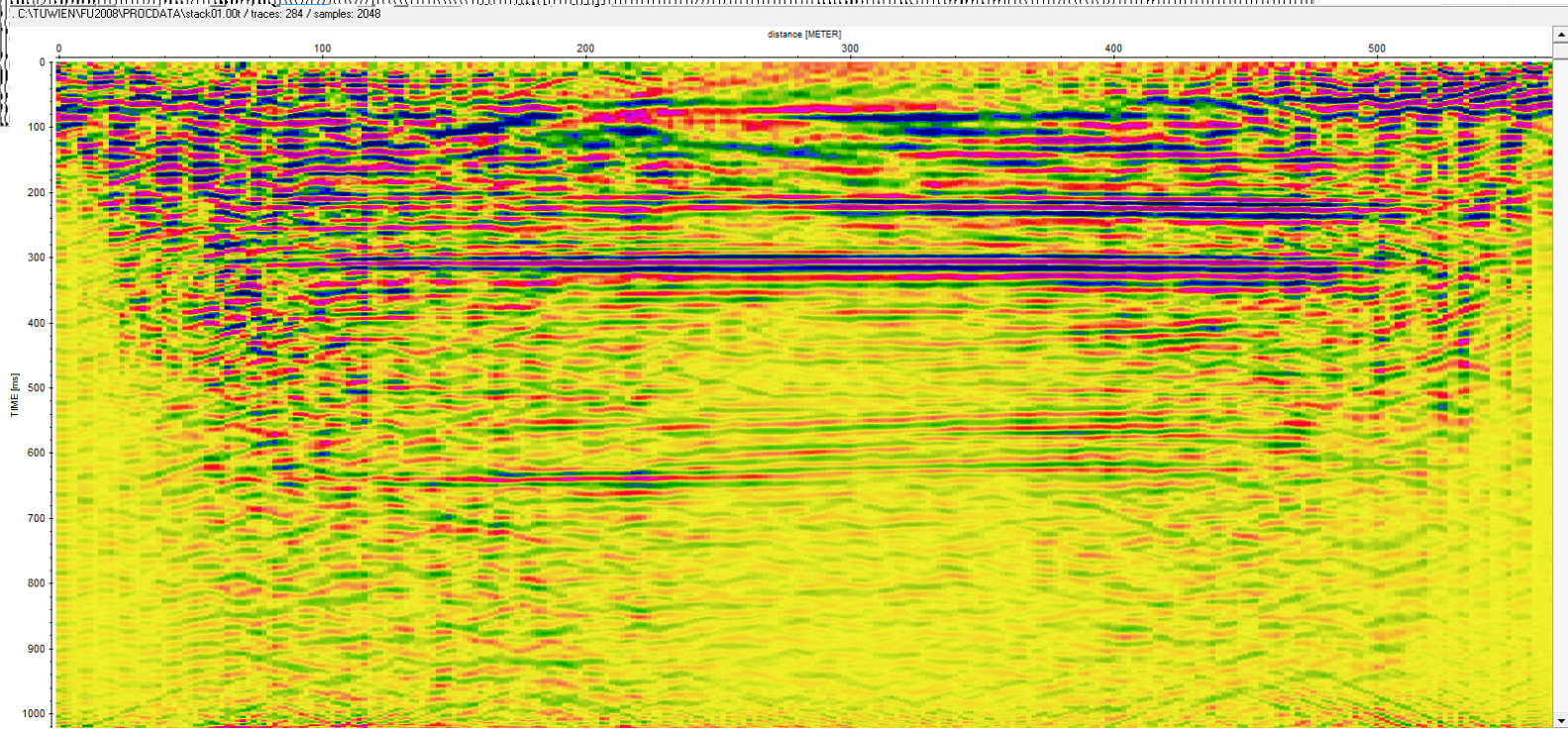

STACK
Reflexw - 2D-dataanalysis
C:\TUWIEN\FU2008\DUMMYDAT.DAT / ensembles: 11 / samples: 2048
stack
enter filename of the stack/NMO-correct data file
stack01
OK
Cancel

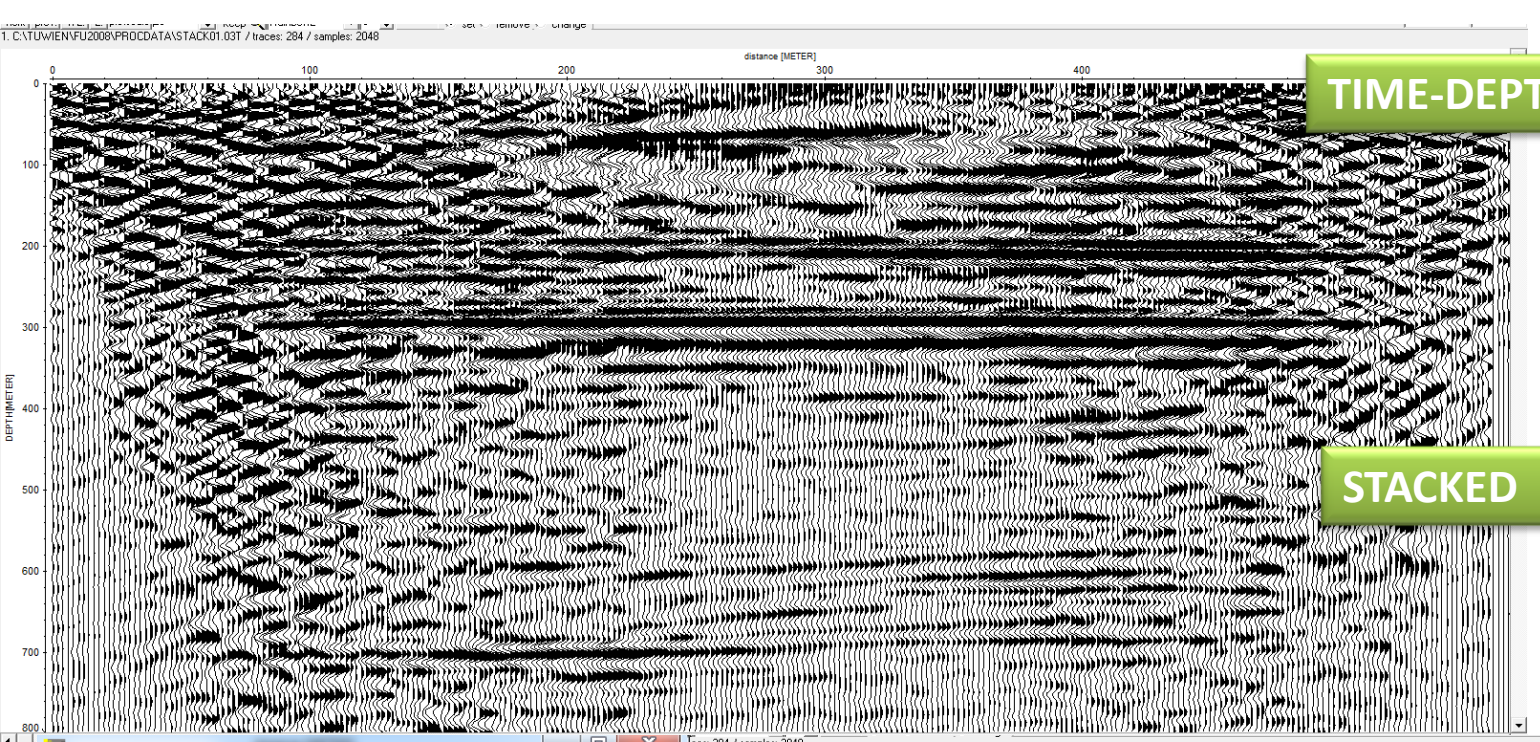
FIRST STACK

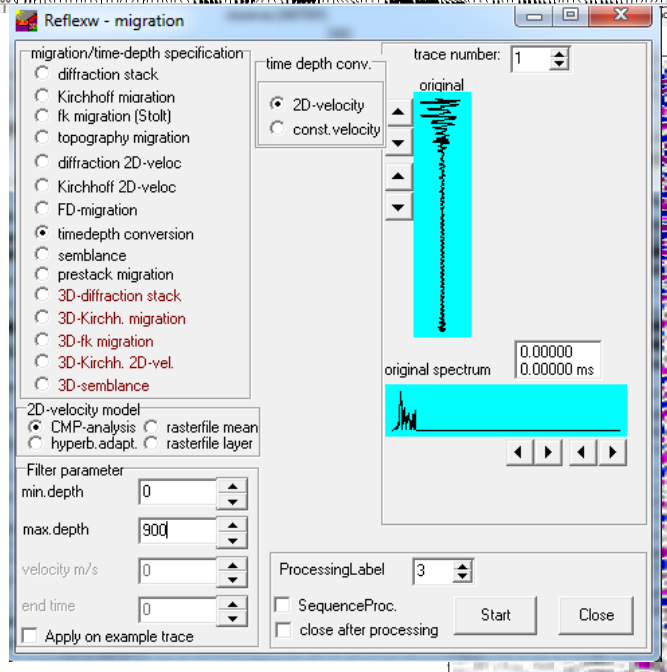
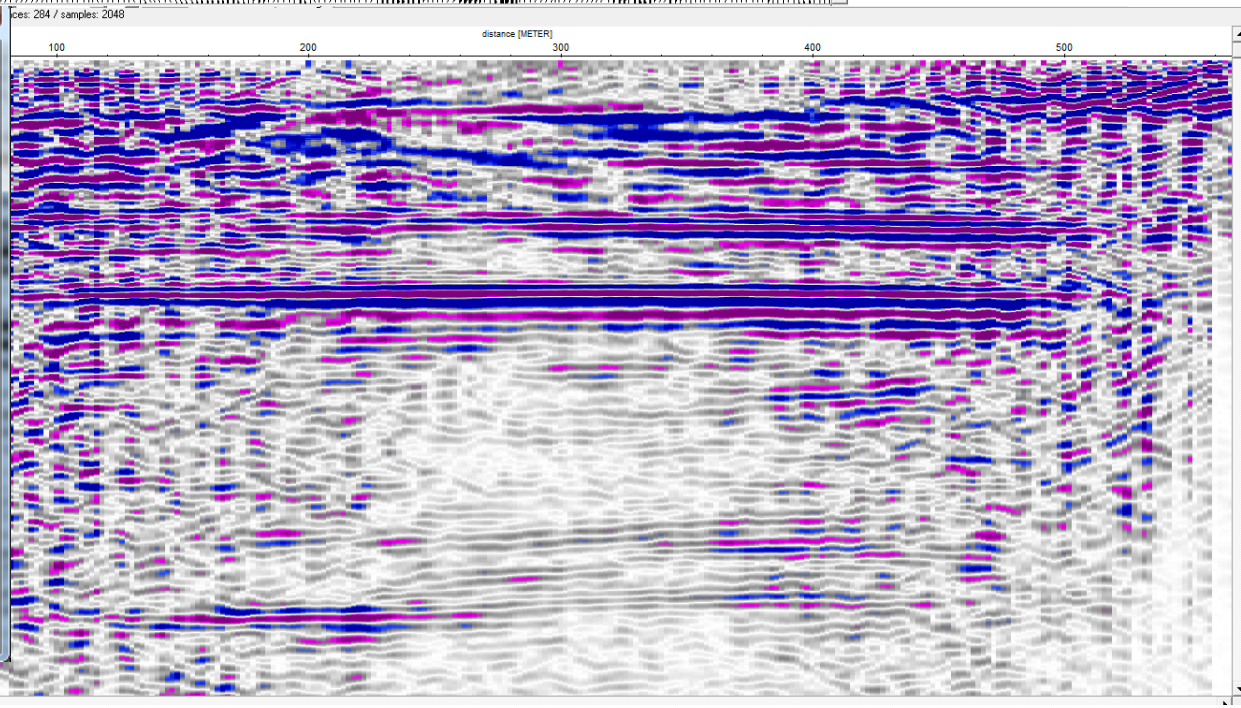

Reflexw - 2D-dataanalysis
File Global Plot View Processing Analysis Help Exit
proc pick CMP x-dist GPS
next prev. 1/2. 2. plotscale 6142.622 keep Rainbow2 0
set remove change
CMP-sorting/stack geometry
CMP shot receiver offset
1. CMP (>=1) 1
last CMP (<=284) 284
increment 1
show save on file next prev. velocity analysis
offsets all pos. neg.
second axis CMP offset shot f-rec. rec.
stack NMO-stack NMO-const.vel. slant stack
NMO-stack/correct load 2D model stack corr.residuals
NMO_VEL.2DM correct range 0
stack offsets min. 1 max. 144 lin.decr.
C:\TUWIEN\FU2008\DUMMYDAT.DAT
stack result
plotscale: 6142.6 C:\TUWIEN\FU2008\PROCDATA\stack01.00t / traces: 284 / samples: 2048
distance [METER]
0 100 200 300 400 500
TIME [ms]
0 100 200 300 400 500 600 700 800 900 1000
CMP
TIME [ms]
0 100 200 300 400 500 600 700

STACKED TIME SECTION







TIME-DEPTH CONVERSION

STACKED DEPTH SECTION