



SEG C3 Salt Model Processing

October 13, 1999 - Chuck Mosher, ARCO

Summary:

- ◆ **C3 Wide Angle subset shown here**
- ◆ **ProMAX Processing system**
- ◆ **Grid resonances required hi-cut filter**
- ◆ **Time shift sufficient for wavelet**
- ◆ **NMO-DMO Stack with known model**
- ◆ **Post-stack Phase shift and Explicit Depth**



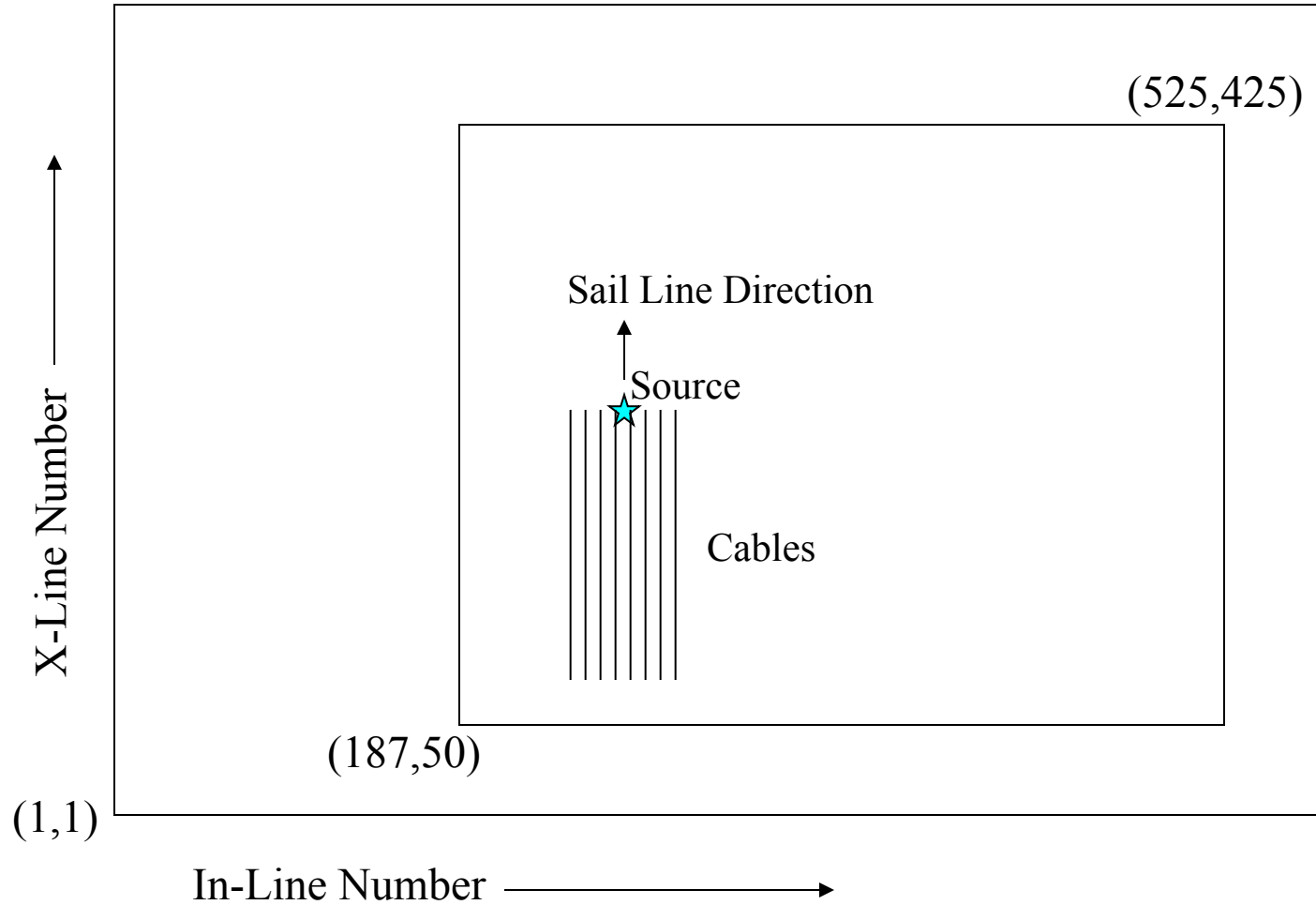
SEG Salt Model C3 Subset

Data Set Stats:

- ◆ **26 Sail lines**
- ◆ **86 Shots per sail line**
- ◆ **Single shot - 8 cables**
- ◆ **544 channels (68/cable)**
- ◆ **5 sec record 8 msec sampling**
- ◆ **80 ft shot interval, 40 ft receiver interval**
- ◆ **1.2 MM Traces, 3.3 GB SEG Y**



SEG Salt Model C3 Subset
In-Line / X-Line Grid





SEG Salt Model C3 Subset Source / Receiver Configuration

Data Set Stats:

26 Sail lines

86 Shots per sail line

Single shot - 8 cables

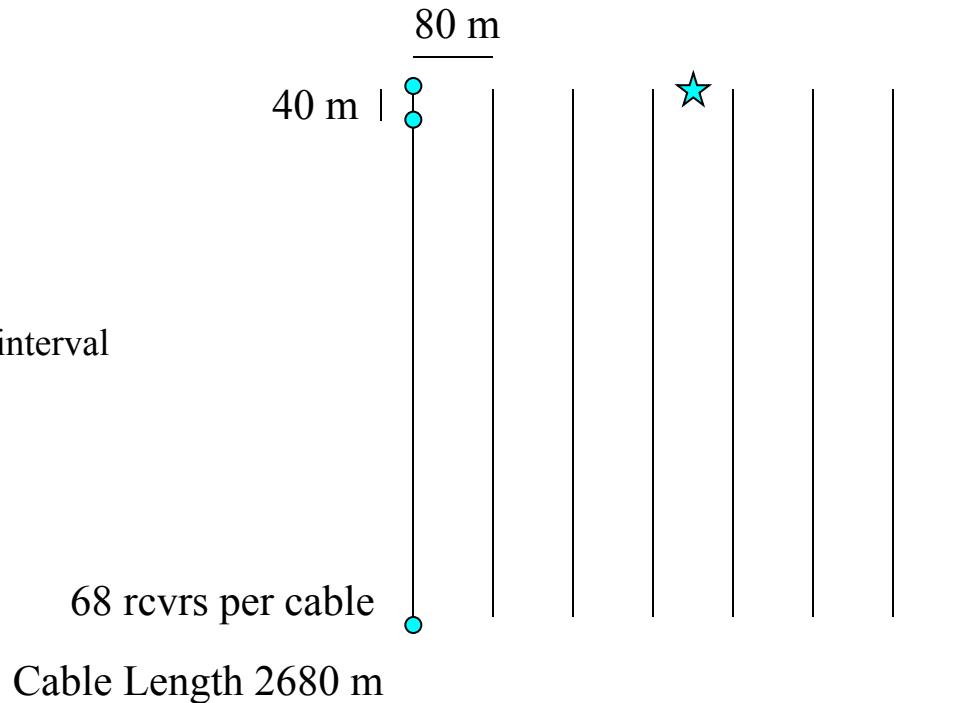
544 channels (68/cable)

5 sec record 8 msec sampling

80 ft shot interval, 40 ft receiver interval

640 m adjacent sail line spacing

1.2 MM Traces, 3.3 GB SEG Y





SEG Salt Model C3 Subset Data Processing Notes

ILINE_NO stored at byte location 181,4I

XLINE_NO stored at byte location 185,4I

Source, receiver coords in standard SEG Y locations

Some missing shots (see fold plot at end)

Time shift of -88 ms needed to correct source to zero time

Screen dumps from ProMAX 3D database follow



Database

Binning Parameters

X origin of 3D grid	0
Y origin of 3D grid	0
Azimuth of inlines	0
Minimum inline number	1
Maximum inline number	800
Number of inlines	800
Distance between inlines	20
Minimum crossline number	1
Maximum crossline number	450
Number of crosslines	450
Distance between crosslines	20
X coord of far end of first inline	-0.00155193
Y coord of far end of first inline	8880
X coord of far end of first crossline	11880
Y coord of far end of first crossline	0.00207038

View Bin Design

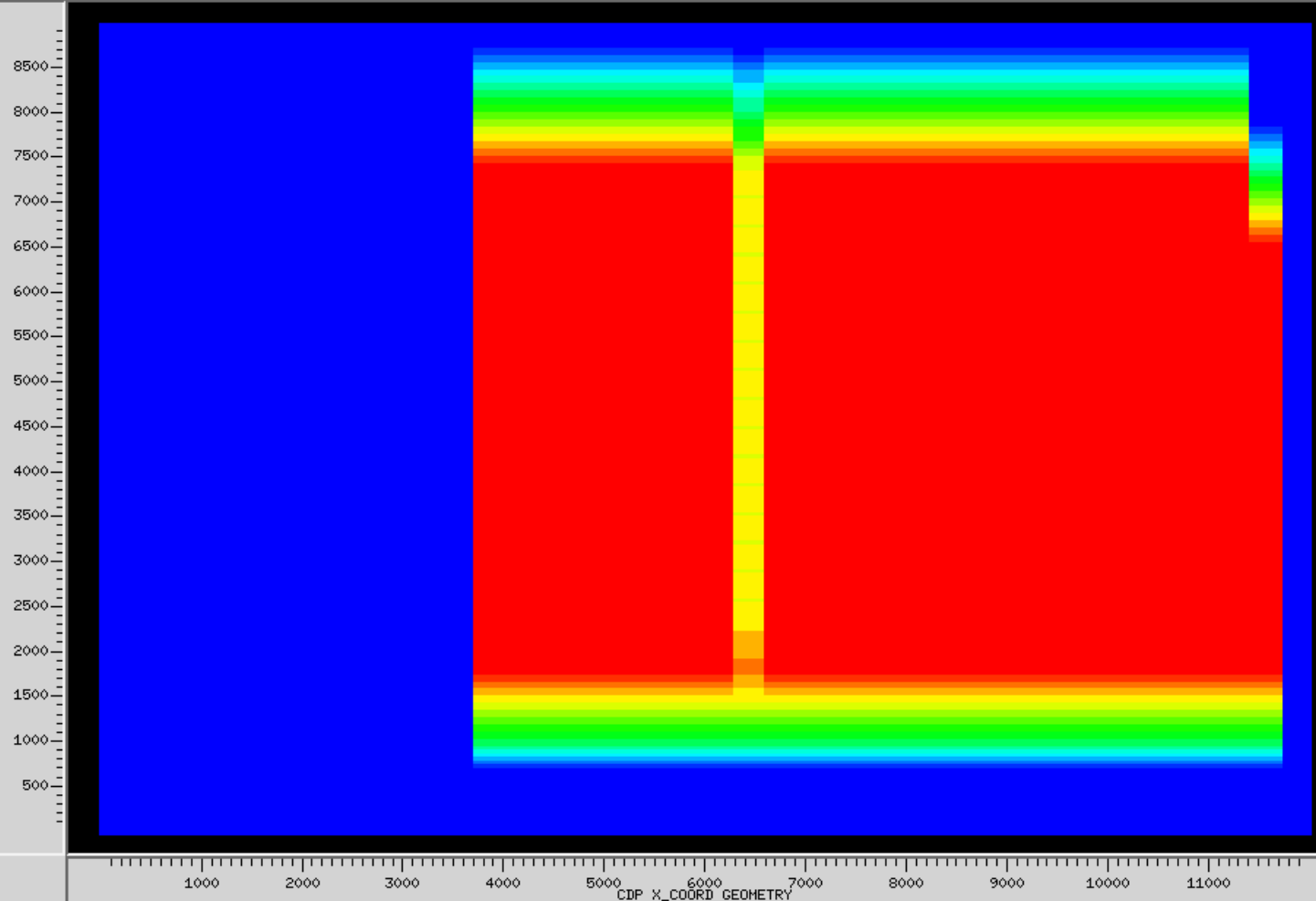


Database	
Maximum traces per receiver ensemble	NULL
Minimum CDP number	1
Maximum CDP number	270000
CDP number increment	1
Total number of CDPs	270000
Maximum CDP fold	17
Minimum SIN (shot index) number	1
Maximum SIN (shot index) number	2304
SIN (shot index) number increment	1
Total number of SInS (records of all types)	2304
Maximum channels per shot	544
Total number of live shots	2304
Longest offset of line	2604.50
Number of offset bins	67
Offset increment between bins	40
Minimum offset bin number	1
Maximum offset bin number	67
Offset bin number increment	1
Maximum channel number	544

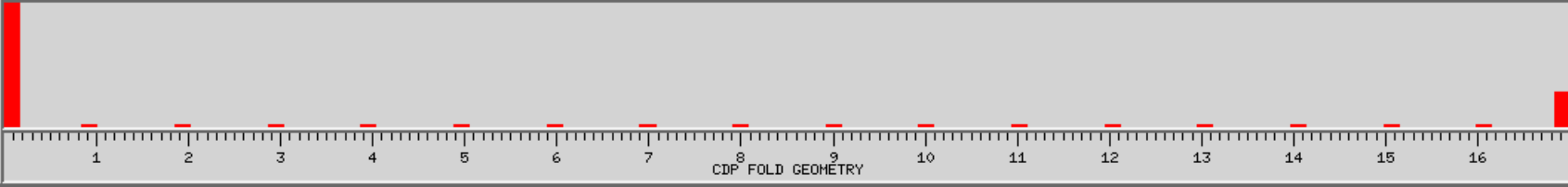


Time=3s

CDP Y_COORD GEOMETRY

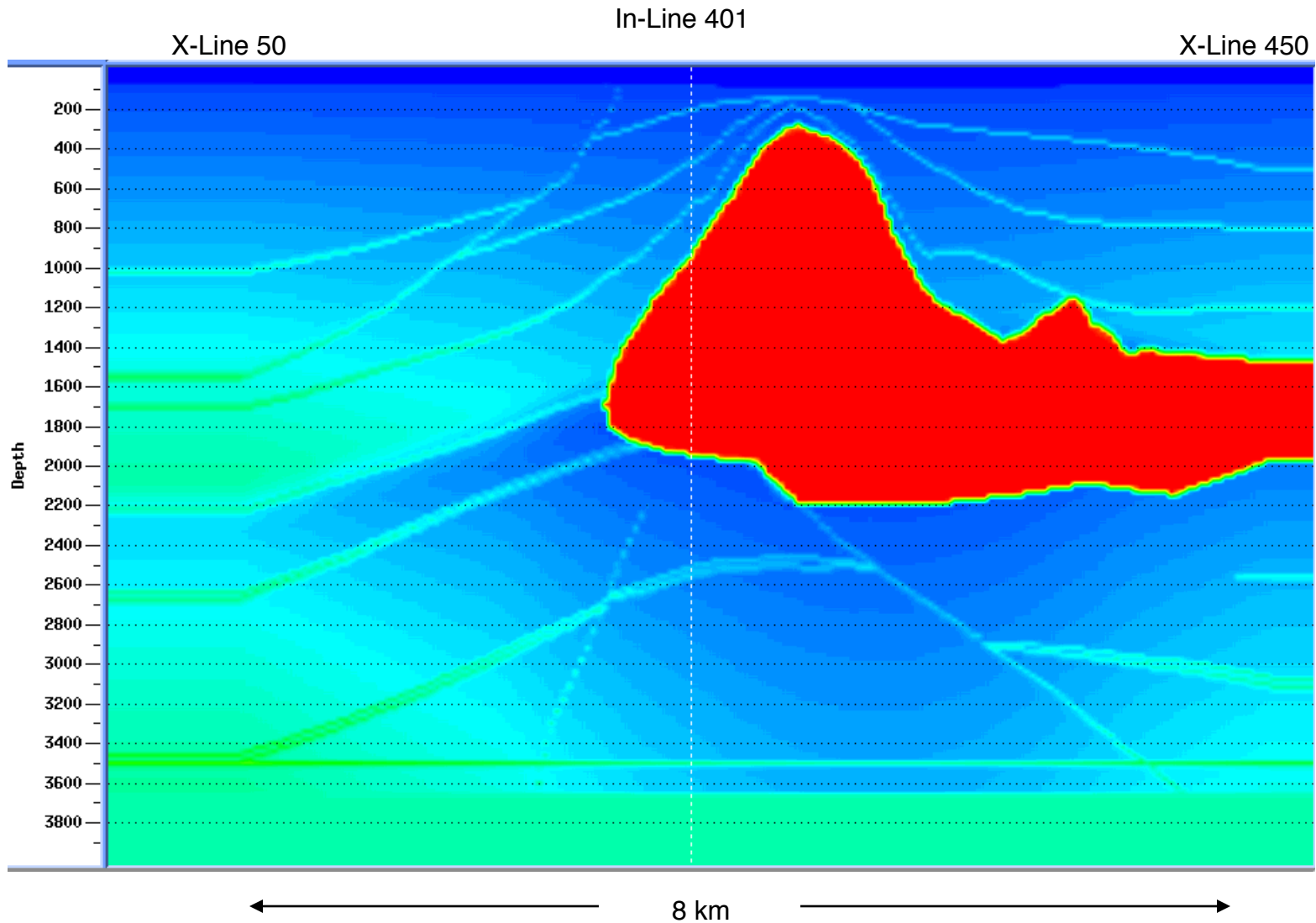


CDP FOLD GEOMETRY





Reference In-Line 401



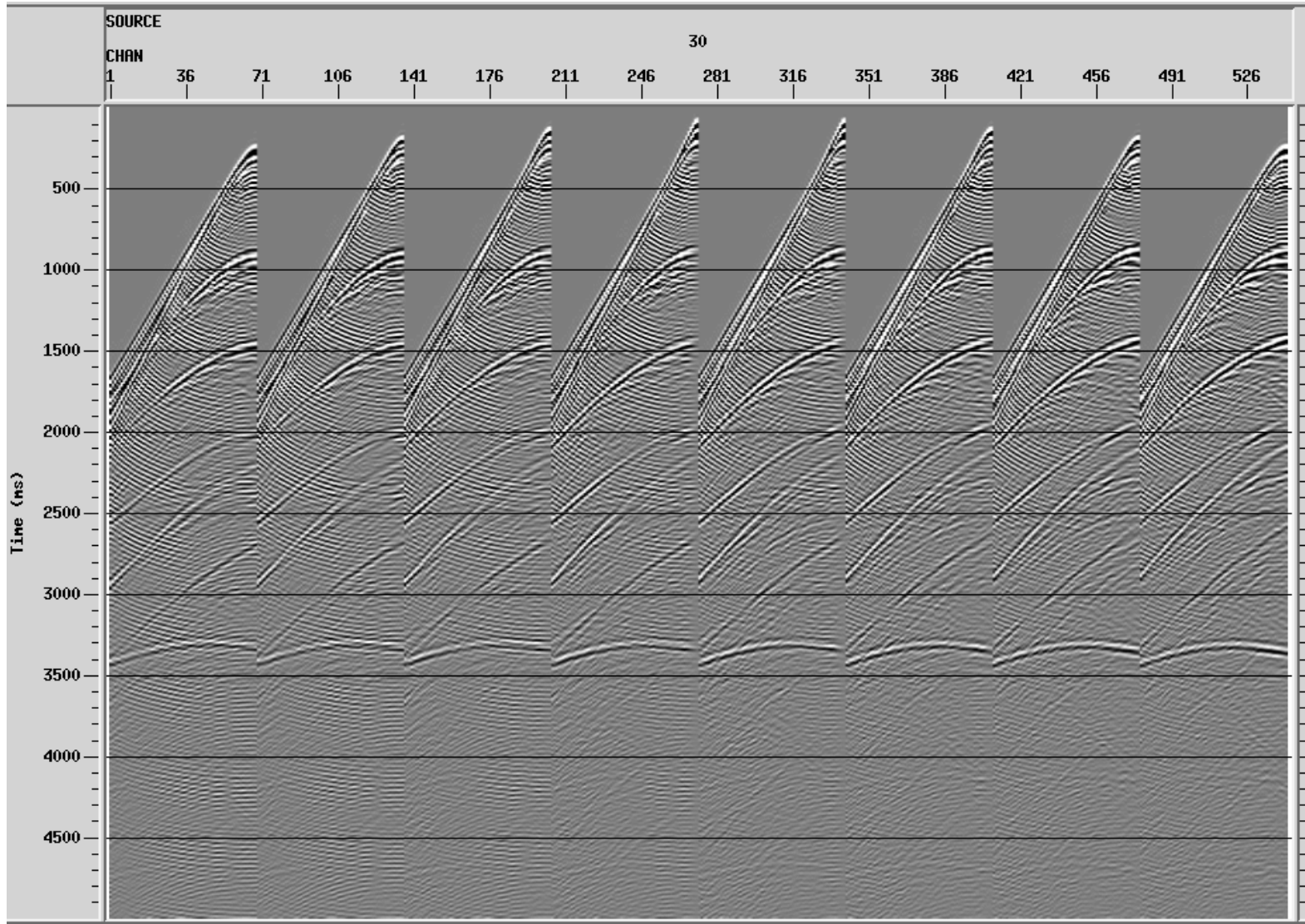


Pre-Processing

- **Threshold amplitudes**
- **Statics for source delay**
- **First power of time**
- **Band pass filter 1-5-20-30**

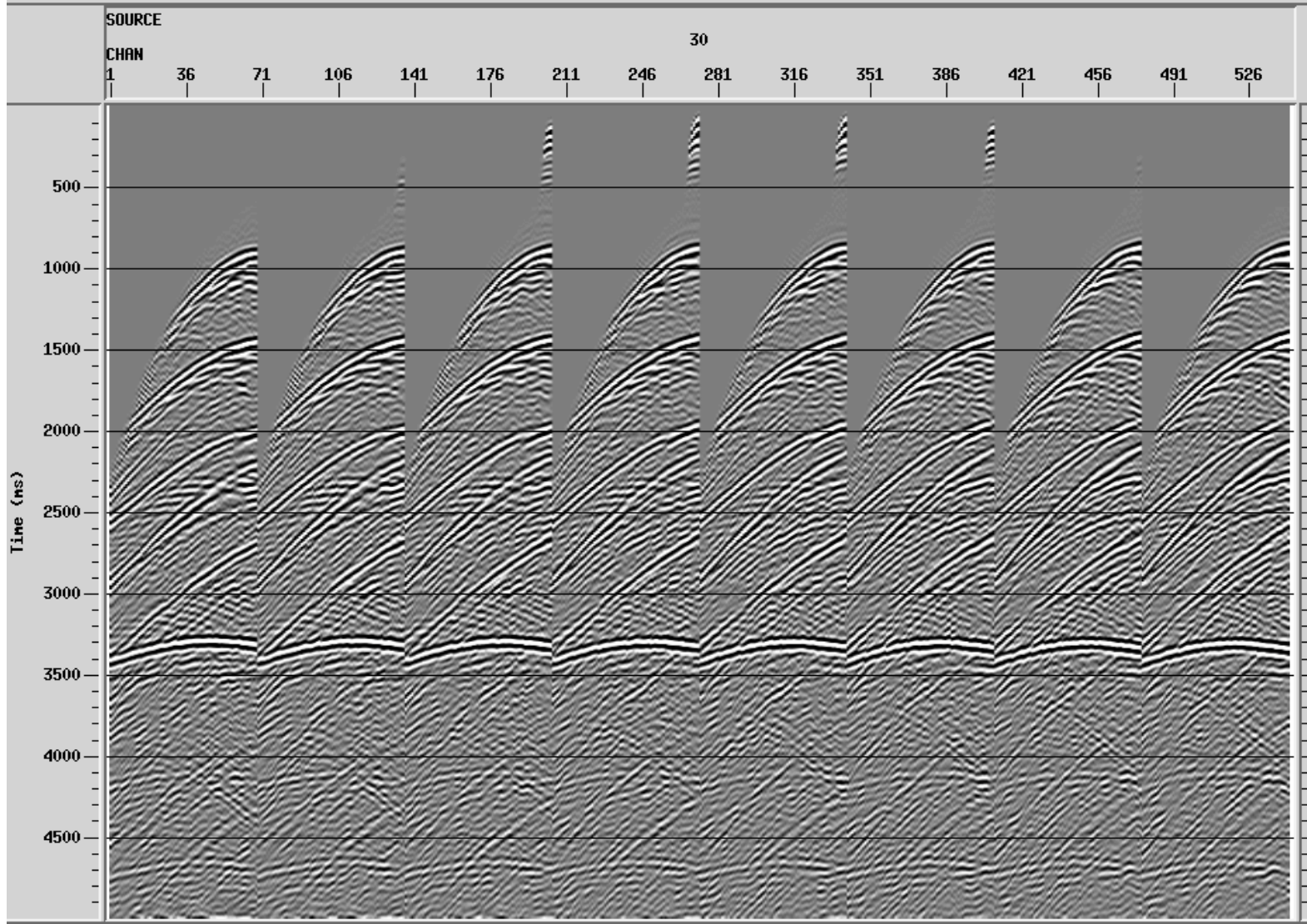


Raw Input Shot



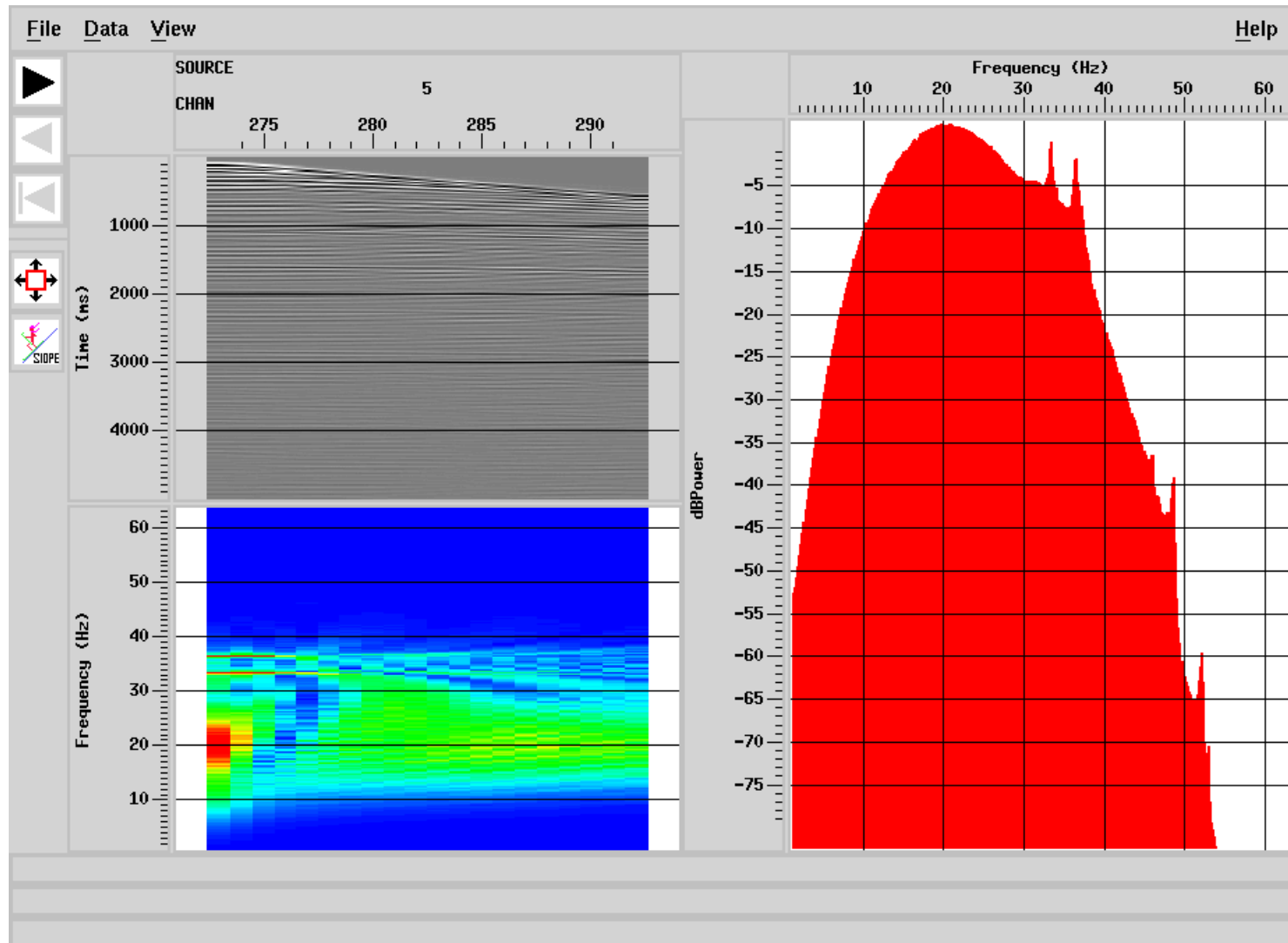


Pre-Processed Shot



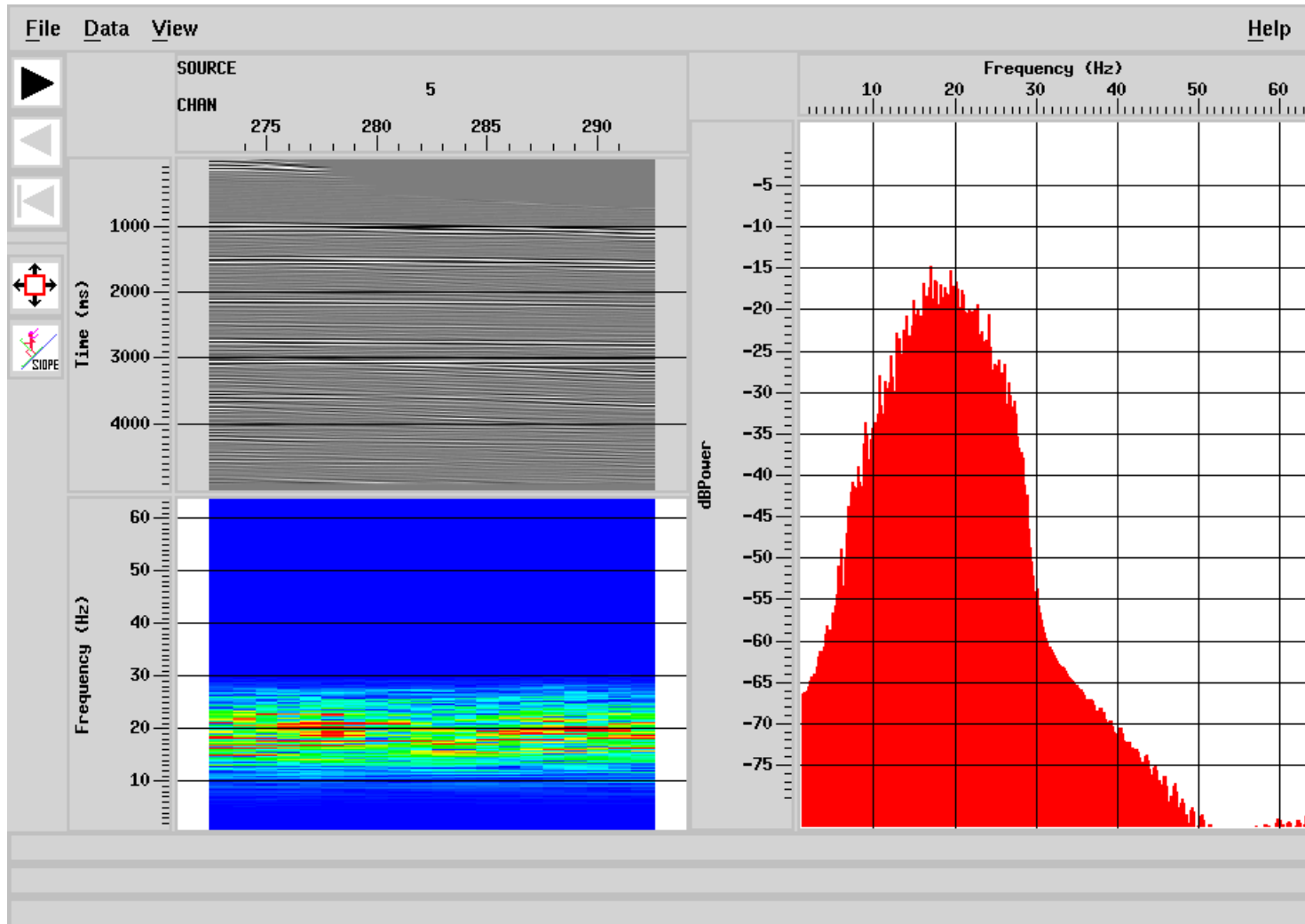


Input Spectral Analysis





Pre-Processed Spectral Analysis





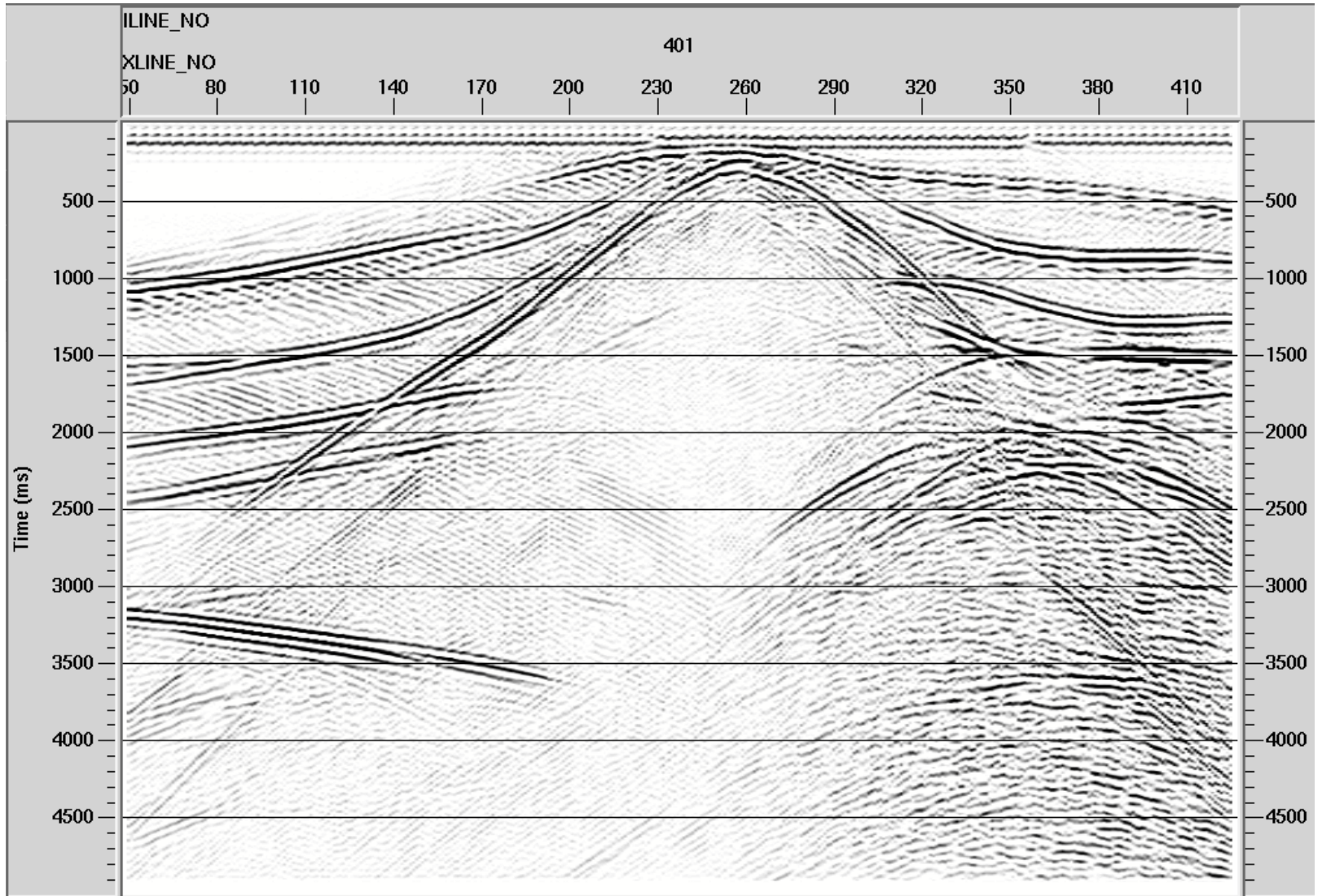
Processing Flows

Baseline with known model

- ◆ **Pre-process shots**
- ◆ **NMO-DMO Stack**
 - ◆ Sort from disk Shots -> CDPs
- ◆ **Fourier infill even in-lines**
 - ◆ Sort from disk In-Lines -> Cross-Lines
- ◆ **Post-stack migrate**
 - ◆ Sort from disk Cross-Lines -> In-Lines

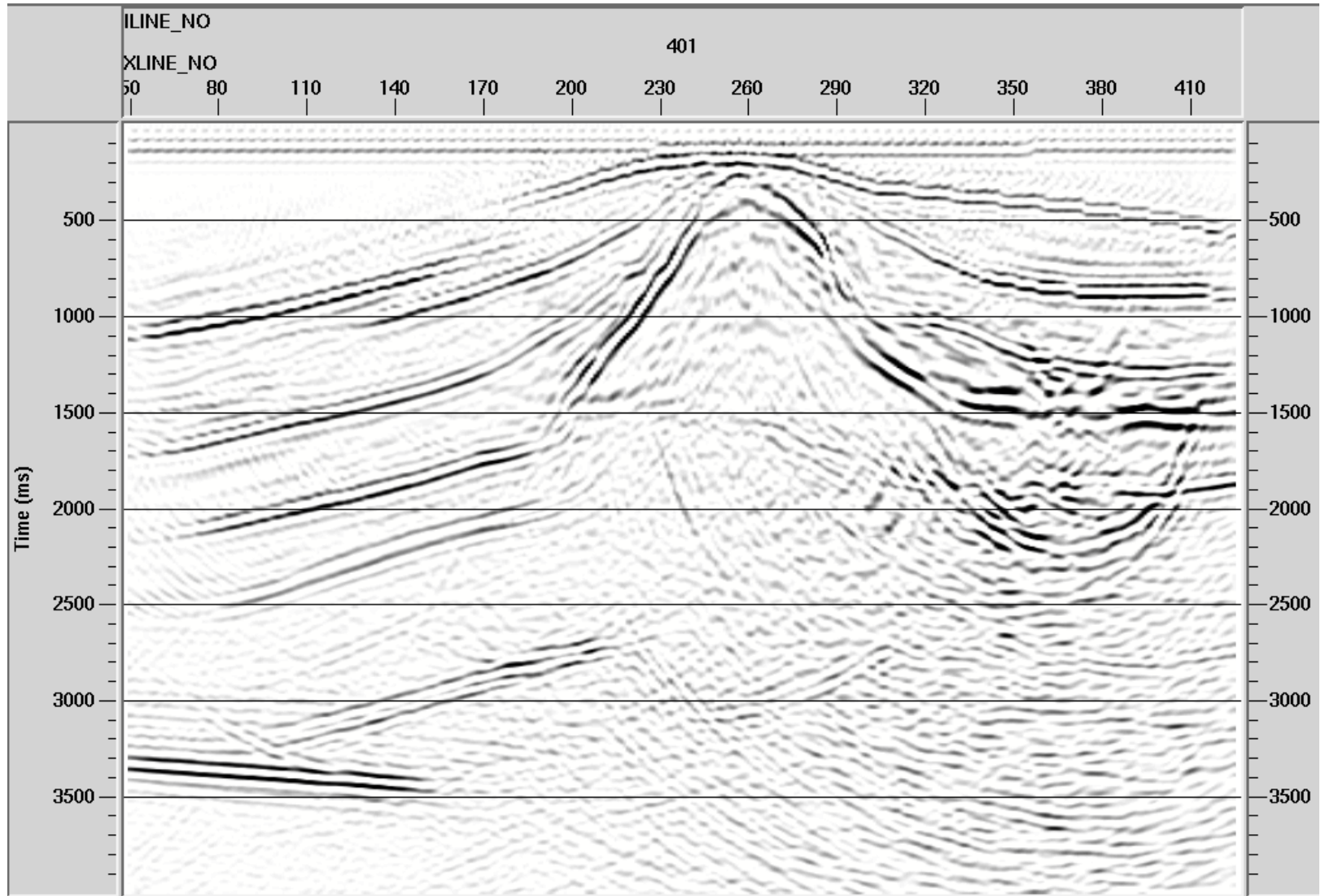


Baseline NMO-DMO Stack



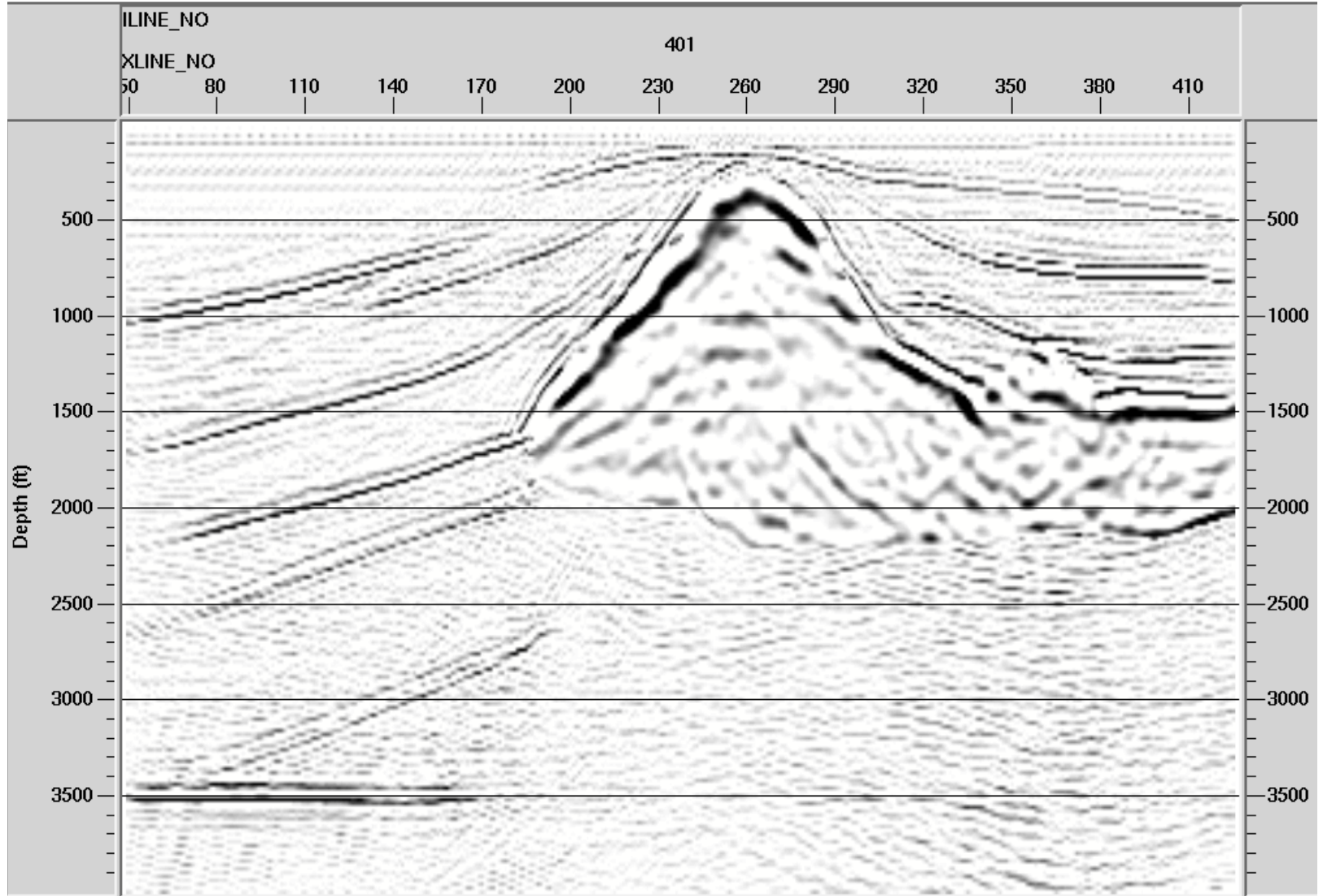


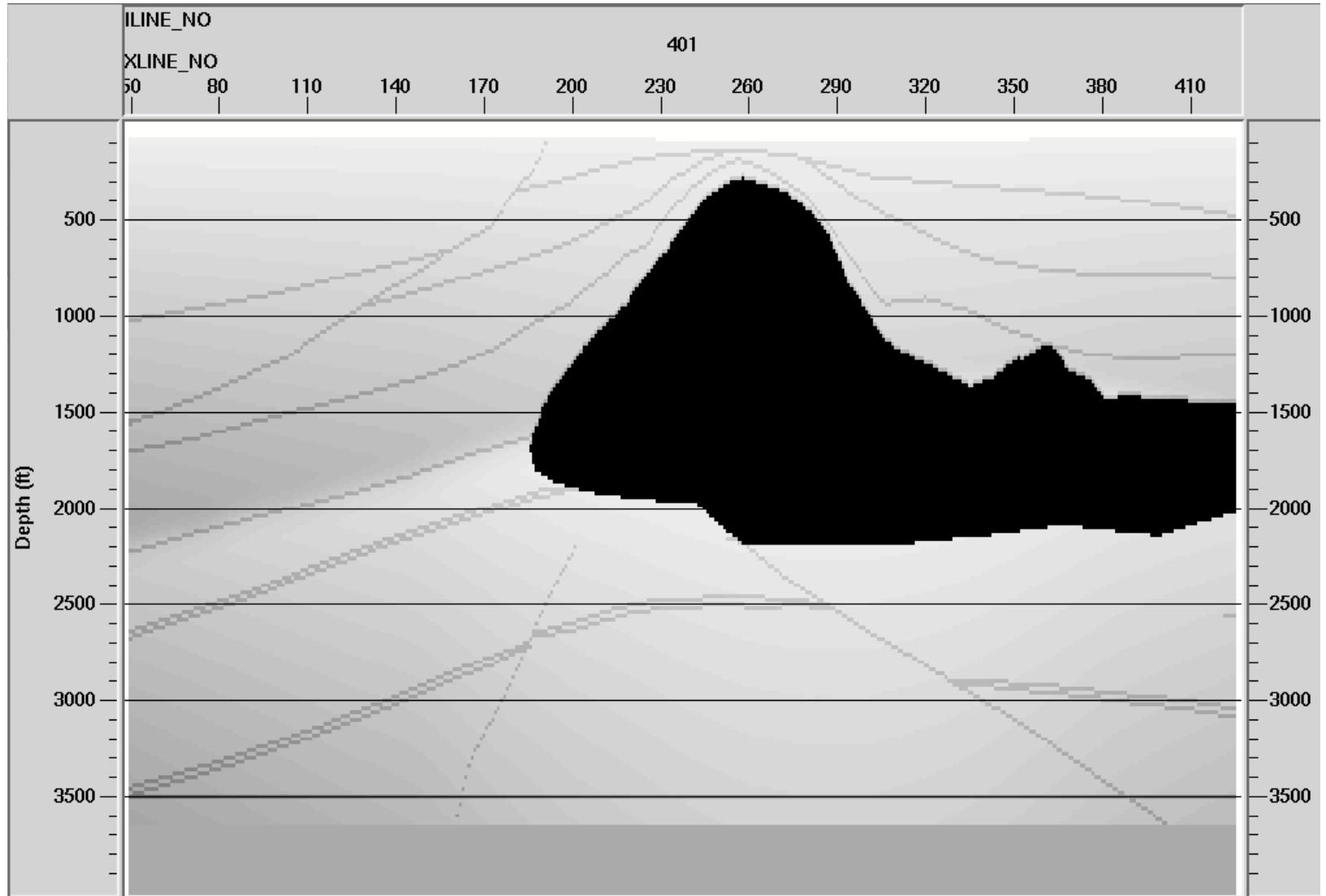
Baseline Phase Shift





Hale-McClellan 3D Explicit FD Depth







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Acknowledgements:

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