



# PC Software for Frequency Dependent Analyses

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## Research Analysis Programs

We developed PC processing programs to facilitate the evaluation of physical model data. In addition, these programs provide a basis for the incorporation of new ideas and algorithms with respect to our research in frequency-dependent reflection, transmission and attenuation. These programs are compatible with our recently developed modeling algorithms.

The software was developed with a windows-based FORTRAN compiler from Absoft. We have transferred several of these programs to UNIX without any difficulty. Our first transfer from Windows based-FORTRAN to UNIX took approximately 15-minutes to complete.

A time-migration of a 3D data set (234 X 101 lines), 1s output window, 2ms sampling with a wide-open aperture takes about 2 hours on a 3.2GHz and 1 GB memory PC.

### Plots

- Fourier Spectra
- 2D and 3D Seismic Section
- 3D Time Slice

### Spectral Decomposition

- Single Trace Analysis
- 2D or 3D Application

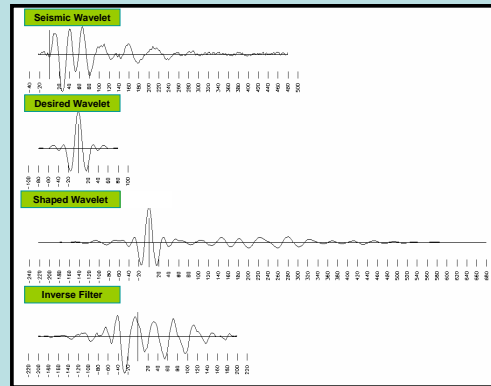
### Auxiliary Routines

- Wavelet Generation
- Shaping Filters
- Convolution

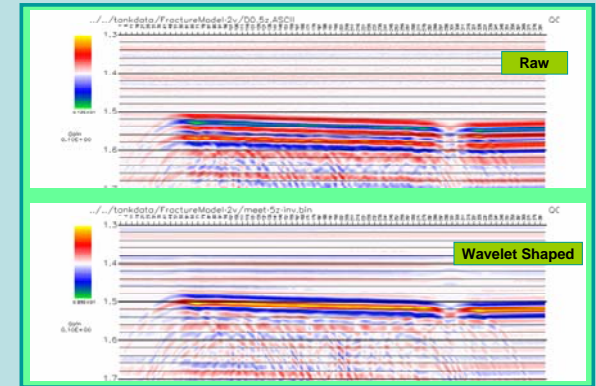
### Migration

- 2D and 3D Time
  - Conventional
  - Non-NMO

## 3. Design of Shaping Filter

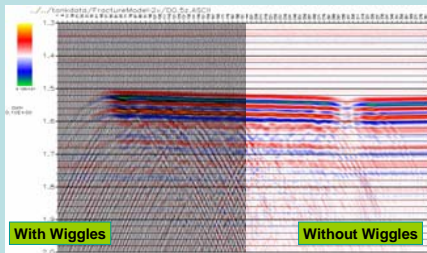


## 4. Wavelet Shaping



## Examples of Software Application

### 1. Raw Seismic

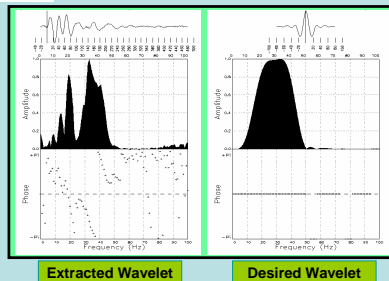


SEISPLOTT plots 2D and 3D

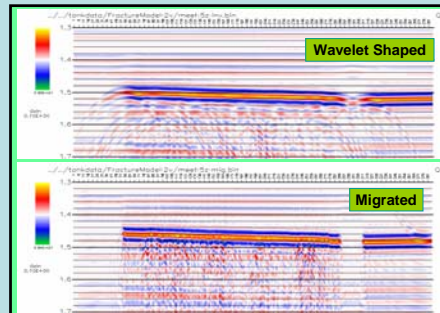
Numerous display options available

### 2. Wavelet Generation

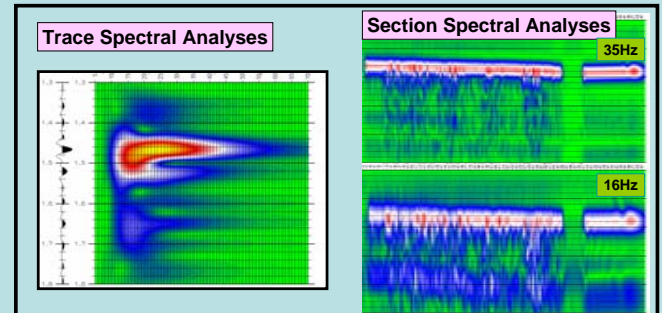
GENWAVE generates Ricker, Ormsby, Gabor, arbitrary amplitude spectrum and frequency-band derivatives, etc. wavelets



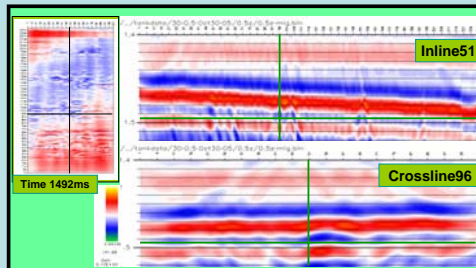
## 5. 3D Time Migration



## 6. Spectral Analysis



## 7. Time Slices



## 8. Derivative Filter

