

IXRefrax

Version 1

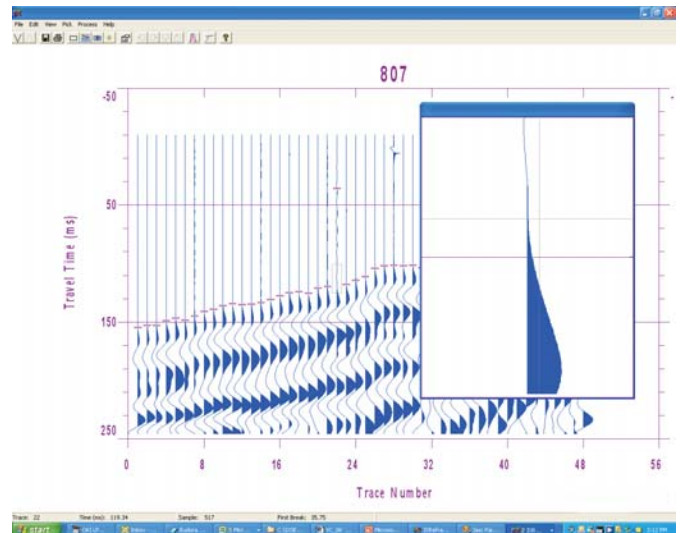
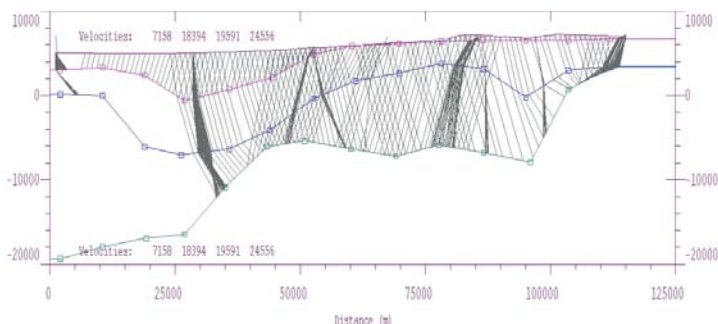
Seismic Refraction Interpretation

Using the Generalized Reciprocal Method

IXRefrax is a Seismic Refraction Processing and Interpretation Package focusing on Automatic, Semi-Automatic and Fully Manual Interpretation using GRM

Features include:

- Virtually unlimited size and number of shot records.
- Direct Import of virtually any Seismic Trace Data Format: SEG-1, SEG-2, SEG-Y.
- Import of first break picks from Flat ASCII and GREMIX-style GRM files.
- Fully integrated Trace picking/processing and travel-time curve analysis.
- 2-D Forward and Inverse Modeling using a simple and very fast method based on the same assumptions as made with GRM.
- Automatic assignment of layers to Arrivals.
- Automatic estimation of reciprocal times.
- Convenient Visual Inspection and Manual Editing of Arrival Assignments.
- Automatic GRM Velocity analysis with Full Manual Intervention and Editing.
- Instant Access to Original Trace Data for First Break Pick Editing from virtually anywhere in the processing flow.
- **NEW! Survey Planning Menu!**



Trace plot with amplified picking window. Breaks can be picked with keyboard or mouse.

IXRefrax uses a simple method of 2-D forward modeling in conjunction with Ridge Regression inversion to fit refraction data to a 2-D model with constant layer velocities.

This is then used to automate the GRM process to give an initial interpretation.

Processing Steps:

- Import Shot data from trace data files.
- Pick and verify first break times.
- Estimate simple 2-D model and find best fit.
- Manually edit 2-D model if desired.
- Use synthetics from 2-D model to estimate arrival assignments.
- Perform GRM interpretation automatically.
- Inspect time-depth section for discrepancies which indicate bad break picks, reciprocal time estimate or incorrect layer assignment.
- Graphically edit reciprocal time estimates
- Bring up offending shot and reassign arrival times to layers
- Bring up offending shot record and re-pick breaks.
- Display time-distance curves with differences and reassign arrivals to correct layers.
- Redo GRM interpretation and display final section.



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