

# MiVu 2.0

## Release Notes

(Released December 31, 2021)

*MiVu version 2.0 has the following features (not all features included here):*

### **Model Building Capabilities**

- Loading of multiple well trajectory and well log files
- Interactive formation top picking on multiple well log characteristics
- Supports both 2D and 3D velocity model building
- Importing of geological contour files for model building
- Velocity model smoothing, adjusting, and shifting
- Multiple Conversion Methods (ASCII to 3D Grid Model, SEG Y to 3D Grid Model, etc.)
- Ability to create Cross-Sections

### **Survey Design**

- 3D survey view to verify well placement, etc.
- Importing of well and geometry files in multiple formats
- Exporting of SPS files for designed geometry
- Loading of source and receiver files in multiple formats
- Traveltime raypath display
- Simple process for building of shots and receivers both on the surface and downhole
- Manual Layer editing for multiple parameters (Pvel, SVel, Anisotropy Parameters, etc.)
- Easily turn on/off grid models, slices, rays, 3D fold, reflection points, etc.
- Capability to Extract an Arbitrary 2D Line from a 3D grid model
- Perform isotropic and anisotropic raytracing
- Perform Finite Difference modeling, and create synthetic trace data

### **Downhole Monitoring**

- Scanning of field data using STA/LTA threshold to find microseismic events
- Point or Line picking of individual events
- Ability to import picks and overlay traveltimes
- Grid Search and semblance weighted stacking (migration) location algorithms
- Multiple trace viewing methods (single component, overlaid traces, 3 components separated, P, Sv, Sh)
- Ability to export picks
- Multiple perforation assignment methods (individual or by importing ASCII or .xls file)
- Suite of Data Preparation modules including filtering, component rotation, etc.
- Geophone orientation using known location (perfs, string shots, vibe locations)

- Velocity model inversion (multiple stages and wells) to optimize starting model (anisotropic capability)
- Trace Display controls
- Event Location Display map
- Hodogram window to optimize P and S pick windows, edit tool polarity, QC particle motion, etc.
- Ability to import sensor orientations from third party software
- Cross Double Difference location method to fine tune existing network
- Focal Mechanism calculation
- Various trace and pick editing options
- Event location exporting in ASCII or binary format

### **Surface Monitoring**

- Scanning of field data using STA/LTA threshold to find microseismic events
- Ability to import picks and overlay traveltimes
- Multiple location algorithms (grid search, stacking scan, double difference, etc.)
- Shares many features with Downhole Monitoring (trace editing and manipulation, data prep, sensor orientation, event location map, velocity model inversion, exporting of event data, etc.)
- Handles star pattern and patch pattern data

### **3D Visualization**

- 2D and 3D display options
- Easy well trajectory importing
- Ability to import and display 3D attribute volumes
- Completion curve displays – pressure, rate, proppant concentration, etc.
- 3D rotation of microseismic and attribute data
- Events can be viewed by magnitude, stage, or other characteristics
- Multi-speed playback capability
- Event/Stage Control visual filter
- Helpful utilities such as frac dimension and area measurements
- Event file and geologic interface importing
- Easy toggle on/off for events, wells, attributes, etc.
- Multi-format velocity model conversion