



Microseismic software solution for hydraulic fracturing and energy applications

DESIGN

Microseismic survey design tools to plan arrays and meet specific engineering objectives.

ACQUISITION

Real-time data acquisition and processing with customisable triggering settings.

PROCESSING

Manual and automated waveform processing with efficient workflows. Complex velocity models and sophisticated algorithms for microseismic location.

INTERPRETATION

Enhanced interpretation of microseismic clouds. Characterise stimulated fracture network geometry and the microseismic geomechanical response to an injection.

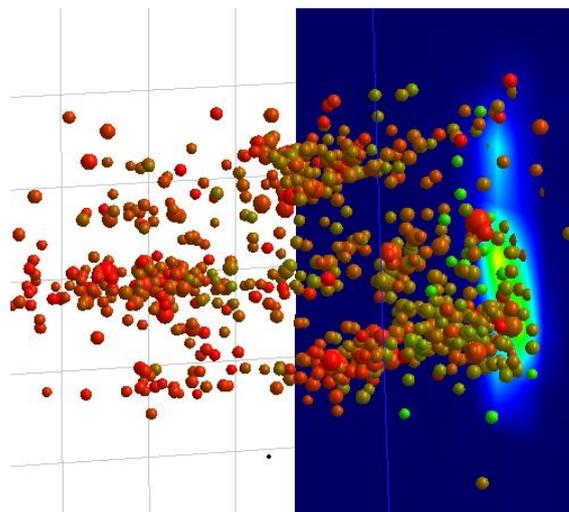
UNDERSTANDING

Interpretation tools for post-analysis of completion objectives and stimulation effectiveness.

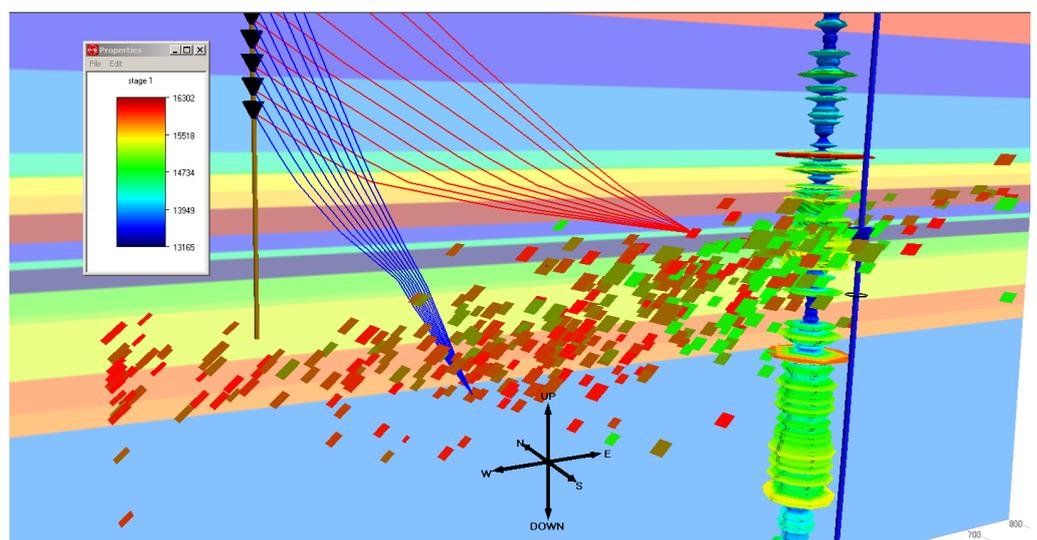
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itasca.co.uk

InSite-HF™ is Itasca's specialist software product for setting up a microseismic hydraulic fracturing project and then guiding the user through data acquisition, processing and interpretation. Microseismic events can be located through simple and complex velocity models. Manual and automated waveform processing can be carried out with comprehensive import and export of raw and processed event data. Seismic events, field objects, geological structures and analysis objects can be visualised within a 3D volume.



- Oil, gas, geothermal, gas storage and other applications.
- Image, investigate, understand, and optimise hydraulic fracturing; confirm stimulation design and optimise fracturing effectiveness.
- Extract the maximum benefit from your microseismic investment.
- Quality control of microseismic processing results.



Software features and benefits

TECHNICAL SUPPORT

Annual Maintenance Support Program includes technical support, service updates, new tools, exclusive web content extensive documentation and full-version upgrades.

PREMIUM SERVICE

Premium Service Plan combines consulting and training in addition to our conventional technical support. PSP can be used for direct one-on-one training and/or assistance in setting up your project. You are in control.

CUSTOM SOLUTIONS

Our toolbox of processing, visualisation and network functions are under continual development. Customised developments can be commissioned.

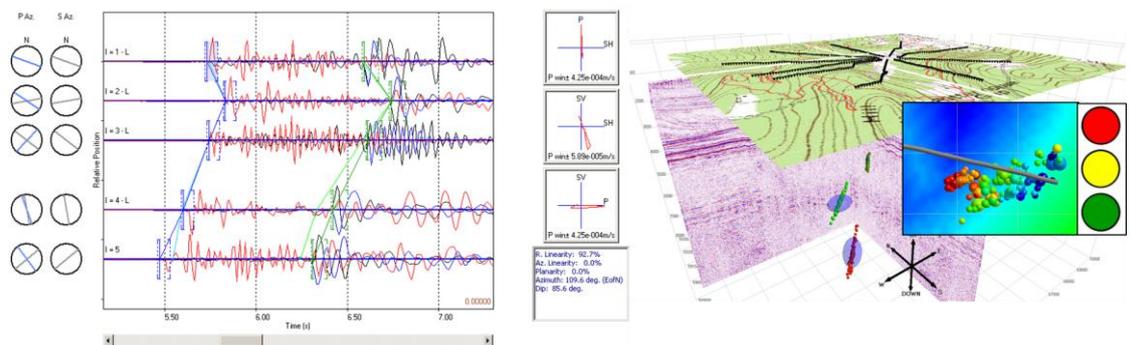
QUALITY ASSURANCE

The software has been available as a commercial product for 20 years. Documented algorithms. Benchmarked and tested against synthetic seismicity.

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- Real-time and off-line of microseismic event detection and processing, including a “matched filter” technique to look for small similar events.
- Customised alarm system for rate or magnitude threshold exceedance.
- Frac Manager Tool to guide users through the project setup, data acquisition and processing flow of a microseismic hydraulic fracturing project.
- Manual or automatic processing of event data with range of sophisticated automatic arrival-picking, source location and source parameter algorithms.
- Processing of MS events acquired through multiple acquisition systems.
- Rotation of waveforms from triaxial or quadriaxial instruments into ray coordinate systems and display of particle motions on hodogram plots
- Tool orientation from multiple calibration shots.
- Graphical interface for manual and automatic calibration of velocity models using multiple calibration shots.
- Display of colour-density sonograms and polarisograms.
- Ray-tracing algorithms with complex velocity structures to locate microseismic events within a 3D volume (including anisotropy).
- Display of the event locations in a 3D scene, allowing rotating, panning, magnifying and flying through the scene plus creation of hot-planes and 3D objects.
- Advanced interpretation tools for charting; spatial and uncertainty analysis.
- Analysis of array performance through magnitude sensitivity and error space.



InSite-HF™ is developed in a version-controlled environment within a quality management system. InSite™ has been available as a commercial product for two decades and has been used by leading companies for real time monitoring, quality assurance, post-processing, reprocessing and advanced analysis.