RokDoc
Ji-Fi

Ikon SCIENCE

Ji-Fi is a unique Ikon Science technology for simultaneously estimating facies and impedances directly from seismic data. This inversion technique brings cross-property rock physics consistency to seismic inversion in a unique manner which allows both geological and data uncertainties to be captured and investigated.

Benefits

Robust

Locate hydrocarbon pools with greater accuracy and confidence

- Extract high resolution geological images from seismic
- Establish and deploy play-based seismic characterization
- Consistently characterize seismic across multiple assets

Fast

Objective, efficient & repeatable seismic characterization framework

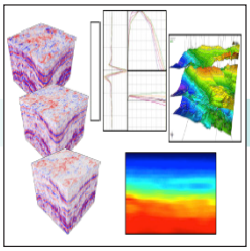
- Single, easy to use platform
- Recipe based workflows with automated QC procedures
- Maximize value of local, regional and analogue well data
- Cross-discipline/data workflows for exploration through to production

Reliable

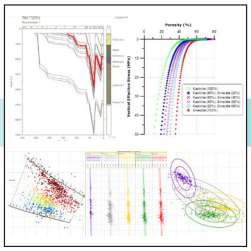
Explore & capture geological & geophysical uncertainty

- Quickly and easily evaluate and validate geological scenarios against seismic data
- Derive in-situ hydrocarbon volume estimates within a consistent geological and petro-elastic framework
- Capture uncertainty and incorporate into robust risk analysis

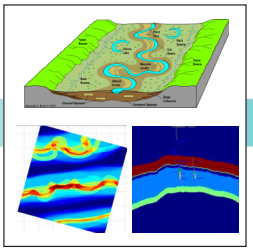
Capabilities



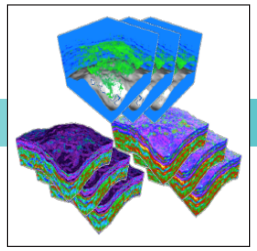
Post-stack or pre-stack seismic, interval velocities, stratigraphy, wavelets and S:N ratios



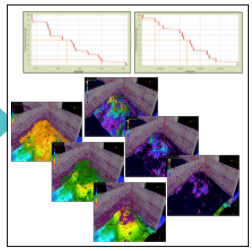
Per elastic facies compaction and rock physics models - basin models, analogues, theoretical and empirical models



Prior distributions - simple geological concepts or complex geo-models

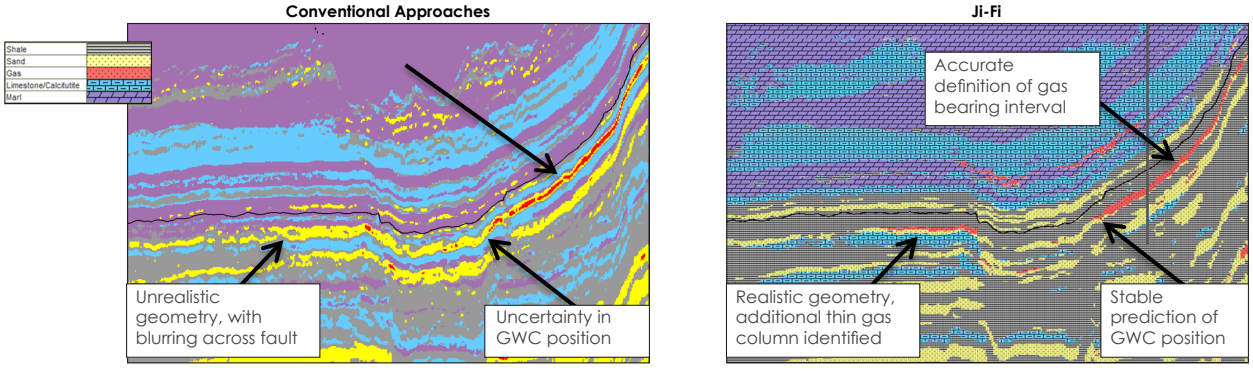


Multiple geological sce-narios and equi-probable realisations



Elastic facies and elastic property probabilities and uncertainties; outputs ranked by volume and N:G

Example

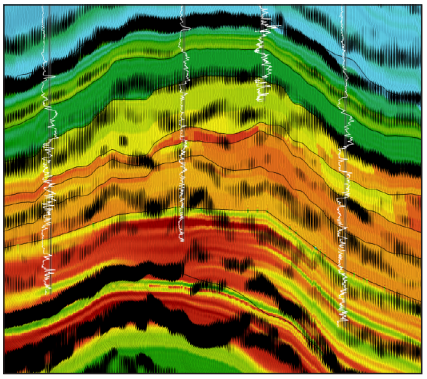


Ji-Fi Add-on

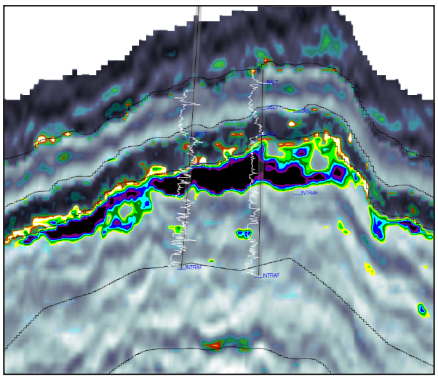
RokDoc Platform	Reservoir Characterization Module		
		Ji-Fi	Flagship Joint Impedance and Facies Inversion to estimate facies and elastic properties directly from post/pre-stack seismic data. Key features include: fast/flexible prior model construction, spatially varying wavelets, local/global modes, lateral constraints, rigorous well and 3D QC, MPI for cluster computing.

Technical Features

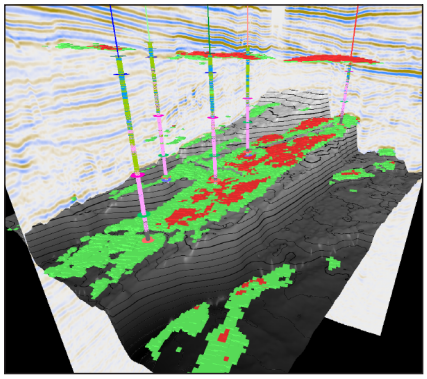
- Create, copy and edit recipes for on-the-fly computation, visualization and QC
- Invert pre- or post stack seismic data
- Incorporate seismic or time-depth velocities as a low frequency constraint
- Utilize laterally and vertically varying seismic wavelets to vary S:N ratio per input seismic stack
- Input facies-based rock physics models as compaction trends or 3D cubes incorporating stress/temperature
- Define rock physics models in TWT or depth domains
- Support for theoretical and laterally varying rock physics models
- Fluid ordering constraints for hydrocarbon bearing facies
- Vertical and lateral stratigraphic continuity constraints
- Rapid multi-zone prior geological model construction incorporating fluid contacts
- Global, multi-trace inversion of facies images
- Local and global optimization modes
- Support for Fatti, Aki-Richards and Zoeppritz reflectivity models
- Facies dependent VTI anisotropic inversion mode
- Interactive well QC and filtering of inversion and log data
- Automatic map and volume QC outputs for residuals, synthetics, derived low frequency model and geological attributes such as N:G and net thickness
- Multi-threaded, multi-CPU and cluster-based processing using message parsing interface, MPI
- Batch export and scheduling capabilities using portable batch system, PBS



Well QC showing predicted facies, facies probabilities and synthetic-seismic comparisons



Elastic property uncertainty and oil facies probability rendered over input seismic stack



Hydrocarbon bodies from a Ji-Fi inversion

Supported Data Types

- Raw well logs
- Composite, processed well logs
- Interpreted well logs
- Image Logs (surface sets, DITF)
- Discrete value sets
- Checkshot data
- Directional surveys
- Formation tops / markers
- Core data (PoroPerm, Elastic)
- SCAL (Capcurves)
- Litho / chronostratigraphy schemes
- Mud logs
- Pressure data (MDT, RFT etc)
- Integrity data (FIT, LOT etc)
- Drilling event data
- Breakouts
- VSP (zero offset/walk-around)
- Post-stack seismic
- Pre-stack seismic
- Horizons
- Corner Point Grids (CPG's)
- Polygons

Data Import Formats

- LAS
- DLIS
- ASCII
- XLS
- JPEG
- TIFF
- SEG-Y (REG/IRREG)
- ECLIPSE.EGRID
- ECLIPSE.GRDCL
- SGRID
- WVL
- WAV
- WAVE
- Import from secondary project
- Import from external project
- Petrel* Interconnector
- OpenSpirit

Visit www.ikonscience.com or email info@ikonscience.com to discover more and request a demo.

System Requirements

RokDoc is supported on the following operating systems:
64bit Windows: Windows 7, Windows 10
64bit Linux: RHEL 6, RHEL7

Processor / hard disk requirement:
Preferred: dual quad core processor / SSD
Minimum: quad core processor / fast rotational speed HDD

System Memory (RAM) requirement:
Preferred: 64GB
Minimum: 8GB (16GB practical minimum for RokDoc 3D / ChronoSeis)

Graphics card requirement:
Preferred: NVIDIA Quadro K5200 (desktop) / NVIDIA Quadro K5100M (laptop)
Minimum: NVIDIA Quadro K4200 (desktop) / NVIDIA Quadro K3100M (laptop)

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*Mark of SLB