

COURSE OBJECTIVES

To familiarize geoscientists with the fundamental concepts of borehole seismic used in Exploration-Production.

On completion of the course, participants will be able to :

- List and understand the different technologies for borehole seismic.
- Follow or supervise design and operations of standard borehole seismic jobs.
- Follow or supervise standard borehole seismic processing.
- Ensure data quality results and optimized deliverables.

COURSE CONTENT

INTRODUCTION - BOREHOLE SEISMIC PRINCIPLE 1.0 day

Borehole Seismic terminology and basic principles
The link between surface seismic, logs and core
Fundamentals on seismic, rock physics and wave propagation
Borehole seismic and surface seismic comparison

BOREHOLE SEISMIC ACQUISITION 1.0 day

Sources : land, marine, signature, Receivers : multi-levels, multi-components tools, coupling
Acquisition techniques : VSP, OSP, Walkabove, Walkaway
Feasibility study, preparation and supervision, technical recommendations, data QC
Examples and exercises

BOREHOLE SEISMIC PROCESSING 1.0 day

Time versus Depth curve, Sonic calibration, drift correction
Synthetic seismogram, sources of errors, impact of wavelet on seismic calibration
VSP processing principles, parameters optimization, 3-components processing
Examples and exercises

BOREHOLE SEISMIC 2D and 3D IMAGING 0.5 day

Offset Impact on processing
OSP imaging, Walkaway imaging
3D borehole seismic, migration, specificity of borehole seismic
Examples and exercises

BOREHOLE SEISMIC APPLICATIONS and INTERPRETATION 1.0 day

Surface seismic calibration, imaging and prediction
Reservoir characterization
Monitoring
Examples and exercises

ADVANCED FEATURES 0.5 day

Cross-well seismic, permanent sensors, permanent sources
4C / 3D / 4D surveys, microseismicity, SWD : Seismic while drilling
Resolution enhancement
Discussion and conclusions

▲ Who should attend the course?

Exploration-Production staff wishing to acquire the fundamentals of borehole seismic.

▲ Duration 5 days

▲ Dates & Location October 20 to 24, 2008 Rueil-Malmaison (Paris)

▲ Tuition Fees € 1,840

▲ Course Coordinator Eric FAGOT

Ref. **GEP / BORESEIS**

Course content : 50% theory - 50% exercises and/or workshop