

Training offer

2D and 3D seismic interpretation

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Classroom and online

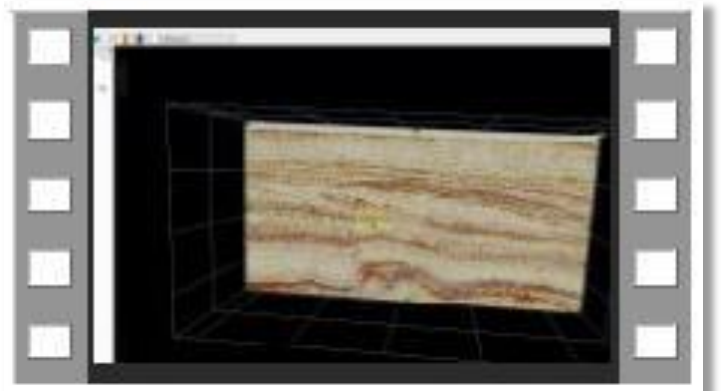
This course will cover the main concepts underlying the interpretation of 2D and 3D seismic data, from its History, the methods of data acquisition, processing, visualization and software. Several mapping exercises will be done using seismic data -faults and horizons -and how they can be used to understand the structure, stratigraphy and geodynamics of an area. The course is designed for geophysicists, geologists, geology engineers, students and professionals who are interested in gaining or deepening practical knowledge about 2D and 3D seismic interpretation. Available as in-house or public venue course from 2020 onwards.

Objectives

- Understand reflection seismic data acquisition and processing
- Visualize seismic data and develop interpretation capacity
- Interpret and map faults and seismic horizons
- Characterize geological features on seismic
- Identify hydrocarbon accumulations using seismic data
- Quantify and risk hydrocarbon accumulations



Classroom lectures and exercises



Online lectures

Training methodology

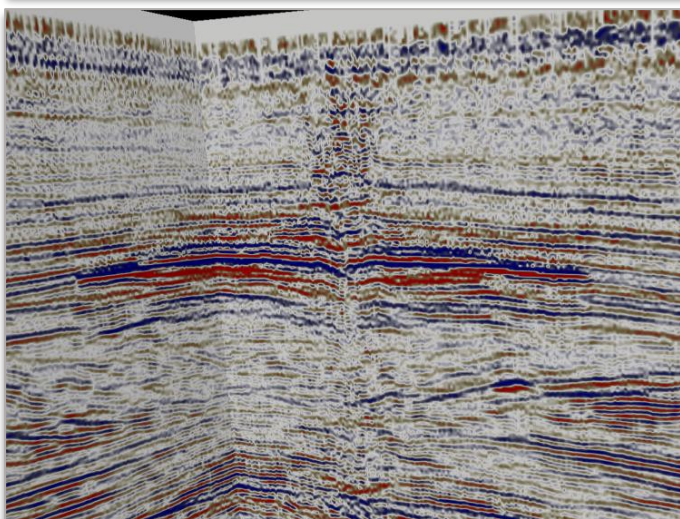
The training course will be based on slide presentations for each module, together with exercises. There will also be sessions with real exploration examples to get participants a hands-on experience on the usage of seismic data. Exercises and examples include several geodynamic settings and participants will be able to evaluate, quantify and risk the presence of reservoirs for hydrocarbons and carbon sequestration, salt structures for gas storage and mineral ores.

Who Should Attend?

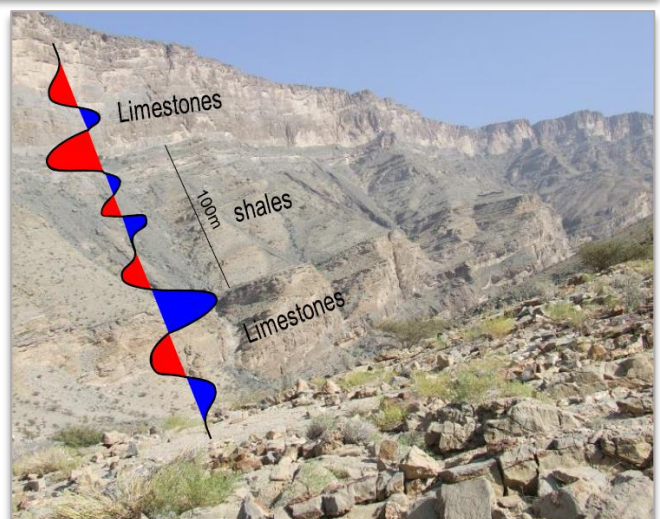
This course is designed for subsurface professionals who are interested in using seismic interpretation for their work or interact with seismic interpreters in their companies, including oil & gas, mining, carbon sequestration and gas storage industries.

This course is suitable to a wide range of professionals but will greatly benefit:

- *Petroleum Geologists*
- *Exploration geoscientists*
- *Sedimentologists and stratigraphers*
- *Petrophysicists*
- *Basin modellers*
- *Reservoir and drilling engineers*



Flat spot and gas chimneys



Comparison of seismic and outcrop scales

Course contents

Introduction to seismic data

History of seismic studies
Rock properties
Data acquisition –Land and Marine

Other geophysical methods

Gravimetry
Magnetics
Electro magnetics

Seismic data processing overview

Conventional pre-stack processing and CMP gathers
Post-stack processing
Seismic migration, velocity models.

Calibration methods

Velocity surveys
Sonic logs
Synthetic seismograms
Vertical Seismic Profiles

2D and 3D Seismic Data

Parameters, visualization, polarity
Seismic Data Libraries, licenses
Software

2D and 3D interpretation techniques

hard and soft events
Vertical exaggeration
Horizontal and Vertical slicing in 3D data
Seismic horizons

Quantitative interpretation geophysics

Acoustic impedance and inversion
AVO and pseudo-gradient
RMS amplitude
Spectral decomposition
Other methods

Fault interpretation

Introduction to fault interpretation
Structural styles
Rift basins
Compressional domains
Salt tectonics
Strike-slip faults
Mapping faults in 2D data
Faults in each seismic line
Connecting faults
Building fault planes
Mapping faults in 3D data
Building fault planes

Structural models

Building a structural model
Visualization
Geometry, kinetics, geodynamics
Palinspastic Reconstructions

Stratigraphic interpretation

Horizon interpretation techniques
Horizon attributes
Continuity and lateral variations
Unconformities and stratal terminations

Seismic facies

Carbonate systems seismic facies
Siliciclastic systems seismic facies
Gross depositional environments

Advanced stratigraphic interpretation

Wheeler diagrams
Seismic sequence stratigraphy

The petroleum system elements and processes

Mapping hydrocarbon accumulations

Volumetrics
Risking

About Chronosurveys

Chronosurveys brings together the best of the Oil & Gas Industry and Academia. We are a group of consultants based in Portugal with experience in Oil & Gas and specialist researchers in Academia that provide integrated services in Stratigraphy, Source Rock evaluation and other Petroleum Geology disciplines. Our services include:

- Biostratigraphy
 - Palynology
 - Nannofossils
 - Micropaleontology (forams)
 - Conodonts
 - Other disciplines (SSF, metamorphic terranes, etc)
 - Review of vintage reports
- Source rock evaluation
 - Organic geochemistry (TOC, RockEval)
 - Thermal maturity (vitrinite reflectance, spore colour, fluorescence)
 - Visual kerogen typing
- Seismic interpretation and prospect generation
 - Data room evaluations
 - Regional prospectivity
 - Volumetrics and risking
- Stratigraphy and reservoir geology
 - Well correlation
 - Petrographic descriptions
 - XRD
- Multiclient regional prospectivity reports
 - Dynamic GIS project (and webGIS version)
 - Petroleum system evaluation with plays, GDE and CRS maps, well data, seismic and cross-sections, outcrop data, source rock and reservoir parameters
- Training
 - In house and offsite training courses (biostratigraphy, seismic interpretation, petroleum geology)
 - Field trips in Portugal
 - Geo-Historical tours of Lisbon

We are available to discuss further details in a Zoom/Teams meeting or by email: info@chronosurveys.com