

Field Course :: High-resolution Sequence Stratigraphy **(Lusitanian Basin, Portugal)**

Cyclicity and reservoir zonation in shallow-marine setting.

Refine your knowledge by taking part in this **UNIQUE** field course on Sequence Stratigraphy in Portugal!

It is a methodological and hands-on course that uses 3D outcrop models to integrate data collected by the participants in the field. This approach, used in the petroleum industry with geological and fluid flow models to optimise production, may be employed to other natural resources, storage of C and H, and injection of contaminants!

COURSE TYPE: FIELD TRIP (05 DAYS)
LOCAL: LUSITANIAN BASIN, CONSOLAÇÃO (PT)
GROUP 01: 08 - 12/SEP (ENGLISH)
COST: € 2000 :: + VAT :: INCLUDES HOTEL AND
TRANSFER (LISBON-CONSOLAÇÃO-LISBON, FIELD
TRANSPORTATION)

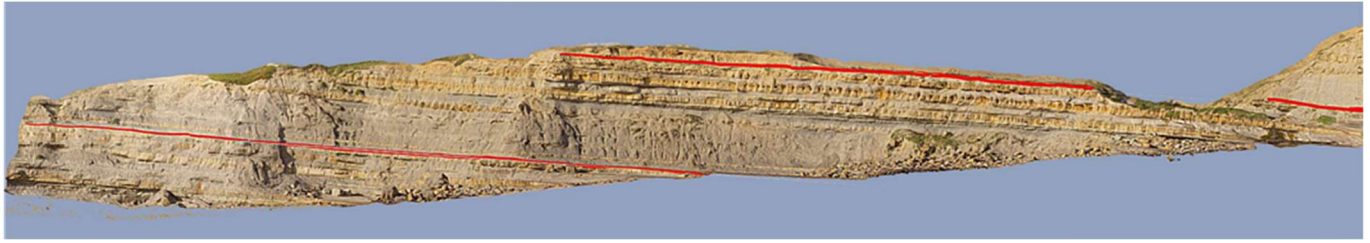


Why is high-resolution sequence stratigraphy so important?

The petroleum industry uses a wide range of advanced software for geophysical processing and interpretation, 3D geological models, Fluid Flow Simulation and matching the historical production. However, if not combined with adjusted stratigraphic interpretations, this tool alone is not enough to protect the business.

Often, poorly represented or neglected geological features can compromise the economic attractiveness of an asset because they generate production expectations with low predictability or are incapable of reproducing historical production. One of the most critical factors that impact the quality of the characterization of reservoirs is their compartmentalisation. This is effectively handled through sequence stratigraphy.

In this way, the chronostratigraphic framework contributes to calculating the volume of hydrocarbons, controlling the connectivity and compartmentalisation of reservoirs, and distributing depositional facies and their petrophysical properties in 3D volumes, for example. This same approach is used to produce other natural resources, storage of C and H, and injection of contaminants.



Virtual outcrop model, Lusitanian Basin, Consolação, PT. Source: Sketchfab.

Objectives

Upon completion of this course, attendees are expected to:

- Learn the concepts and methodology of sequence stratigraphy;
- Propose chronostratigraphic frameworks applicable to the exploration and production of hydrocarbons and other natural resources, the storage of C and H, and the injection of pollutants;
- Use high-resolution sequence stratigraphy for reservoir zonation and characterization of natural resources deposits;
- Understand the impact of this approach on fluid injection and production performance..

Content

The shallow-marine succession that crops out near Consolação shows a remarkable cyclicity of vertically and laterally compartmentalised potential reservoirs. This is observed in several hydrocarbon producing fields, and their modelling and characterization can be significantly benefited by high-resolution stratigraphic analysis.

Fieldwork is supported by facies analysis, gamma-ray logs, orthophotomosaics, and virtual models of outcrops. All the data collected by the participants are used in the stratigraphic correlation exercises and integrated into 3D digital outcrop models.



Shallow-marine succession, Consolação (Portugal)

- **Day 1:** Travel from Lisbon to Consolação at 10 am.
Afternoon activities: course schedule and classes on the Lusitanian Basin and review of sequence stratigraphy.
Exercise: interpretation of outcrop orthophotos.
- **Day 2:** Field: description of clastic marine and carbonate successions, interpretation of stacking patterns and stratigraphic surfaces.
Hotel: data integration.
- **Day 3:** Field: description of clastic marine and carbonate successions, interpretation of stacking patterns and stratigraphic surfaces.
Hotel: data integration.
- **Day 4:** Field: description of clastic marine and fluvial successions, interpretation of stacking patterns and stratigraphic surfaces.
Hotel: data integration.
- **Day 5:** Hotel. State of the art in the stratigraphic analysis of outcrops using virtual 3D models, gamma-ray logs and columnar sections. Exercises and closing.
Travel to Lisbon at 4 pm

Who Should attend

Geologists, geophysicists, and engineers working in the exploration and production of petroleum and other natural resources, storage of C and H, and injection of contaminants.

Instructors

- A.J.C. Magalhães, PhD
- Gerson J. S. Terra, MSc