Advanced Formation Evaluation in Carbonates

02 - 06 Mar 2025
Online

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Advanced Formation Evaluation in Carbonates

Ref.: 15352_297976 **Date:** 02 - 06 Mar 2025 **Location:** Online **Fees:** 2500 **Euro**

Introduction

Advanced formation evaluation and interpretation in carbonates will be the main topic of this course. Pore geometry and assessing the variables that affect carbonates, such as "m," "n," and microporosity, will receive considerable attention. Workshop examples are covered in this course for 1-2 hours each day in order to prepare students for their future work in carbonate reservoir situations. Participants will gain knowledge of the concepts and results of dolomitization as well as the geology of carbonates. The mechanics and use of a few specific logging tools with a focus on carbonates interpretations will be presented. During the course, specific technologies including Nuclear Magnetic Resonance NMR imaging, an NMR scanner, acoustic measures, acoustic scanner imaging, and borehole imaging to measure vugs and cracks will be discussed. Along with pore geometry and flow units, participants will also learn about capillary pressure measurements, J-Factor applications, and petro-rock classification.

Targeted Groups

- Exploration Geologists
- Production Geologists
- Well-site Geologists
- Operations Geologists
- Well Data Managers
- Geophysicists
- Petrophysicists
- Geotechnicians
- Others who use log data on a daily basis.

Course Objectives

- Explain diagenesis in detail and carbonate geology. Deposition, nuclear magnetic resonance, and NMR-Scanner are among the topics that participants will learn about.
- Discuss acoustic measurements and the acoustic scanner.
- Specifically emphasize logging and formation applications.
- Address both ultrasonic and micro-resistivity borehole imaging.
- Gain knowledge of the physics of neutron logging.
- Learn about the formation factor applications, variable-M, and the physics of dielectric logging, as well as the dielectric scanner.
- Learn how to estimate carbonate permeability.
- Introduce the Connectivity Theory, a novel method for analyzing carbonates without the use of the Archie
- Discuss flow units and Lorenz graphs
- The capillary pressure from core analysis and the NMT T2 conversion
- Get knowledge of the J-Function, several kinds of rocks, Winland, and the ADNOC function.

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Unit 1: Geology of Carbonates and Dolomitization

- Geology of carbonates and dolomitization
- NMR scans and nuclear magnetic resonance
- The acoustic scanner and acoustic measurements
- Day one will include a review of diagenesis and carbonate geology. Deposition, nuclear magnetic resonance, and the NMR-Scanner will all be covered for participants. We'll also talk about acoustic measurements and the acoustic scanner.

Unit 2: Applications for formation and logging

- Micro-resistivity and ultrasonic imaging for borehole imaging
- Pulsed neutrons used in neutron logging physics to produce a sigma log
- Dielectric logging physics and dielectric scanner physics
- Applications of variable-M and the formation factor

Unit 3: Dual Porosity, Vugs, and Wettability

- The variable-N and wettability
- Vugs and cracks have an impact on resistivity readings.
- Quantitative assessment of the dual porosity in carbonates: macroporosity and microporosity
- On the third day, the major considerations will be wettability, vugs, and dual porosity. The opportunity to learn about wettability, the variable N, the impact of vugs and fractures on resistivity measurements, and more will be provided to participants. Macro-, micro-, and dual porosity, as well as a quantitative assessment of the dual porosity in carbonates.

Unit 4: Permeability Estimates and Flow Units

- Connectivity Theory: a methodology for carbonate interpretations without the usage of the Archie Equation Flow units and the Lorenz plots.
- Permeability calculations in carbonates

Unit 5: Capillary pressure and rock types

- Using core analysis, calculate capillary pressure
- Capillary pressure from the J-Function of the NMT T2 conversion
- Winland and the ADNOC Pore Model: examples of rocks

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Advanced Formation Evaluation in Carbonates

code: 15352 **From:** 02 - 06 Mar 2025 **Venue:** Online **Fees:** 2500 **Euro**

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