PetroSkills

Laboratory and Field Measurement of Special Rock Mechanical Properties

MODULE

About the Skill Module

While conventional laboratory tests provide important basic data, proper geomechanical characterization of rock properties requires acquisition of important data from several other sources such as special laboratory tests and field measurements. This skill module introduces these data sources and explains their values and applications for geomechanical characterization.

Target Audience

Geoscientists, petrophysicists, completion and drilling engineers or anyone involved in unconventional reservoir development.

You Will Learn

Participants will learn how to:

- Recognize the importance of compressibility tests in reservoir geomechanics and identify different types of compressibility coefficients
- Describe procedures of hydrostatic and uniaxial compressibility tests in drained and undrained conditions
- Recognize the influences of (cyclic) production and injection on the mechanical response of rocks
- List the reasons for conducting non-destructive tests and the procedures for some major non-destructive tests including rebound hammer, indentation and scratch tests and list their limitations
- Explain the differences of dynamic and static measurements of elastic rock properties and recognize the importance of comparing static and dynamic elastic properties
- Describe the procedure for the ultrasonic test and calculate dynamic rock properties from the results of this test
- Recognize the influence of rock anisotropy on the results of ultrasonic tests
- Explain how acoustic emission measurements can help with the characterization of failure in rocks
- List different field measurement methods that can be used for the characterization of mechanical rock properties such as wireline logs, seismic surveys, seismic and micro-seismic monitoring and mechanical field tests

Product Details

Categories: Upstream

Disciplines: Petrophysics

Levels: Basic

Product Type: Individual Skill Module

Format: On-Demand

Duration: 3 hours (approx.)

$395.00