Naturally-Fractured Reservoirs: Static & Dynamic Modeling
in collaboration with GoGeo Engineering

5.00 days
Overview

AUDIENCE
Geophysicists, geologists and reservoir engineers involved in integrated reservoir studies, geomodelers involved in fractured reservoirs looking for a full integration of all available data. Clastics, carbonates or shale play, the natural fractures will play a major role.

PURPOSE
This course provides a clear and relevant workflow integrating geophysical, geological and engineering data to develop reservoir models for Naturally-Fractured Reservoirs (NFR). The course covers the geological aspects of natural fractures and their impact on the reservoir performance.

LEARNING OBJECTIVES
Upon completion of the course, participants will be able to:
- build a predictive 3D fracture model, constraining the model with the dynamic data,
- use neural network in order to recognize what controls the fractures density,
- identify sweet spots,
- generate porosity and permeability models for dynamic reservoir simulation,
- practice reservoir simulation and apply history matching techniques.

PREREQUISITE
No prerequisites for this course.

WAYS AND MEANS
Short lectures alternating with hands-on practice on a real case study dataset, using a dedicated software tool for fractured reservoir modeling: FRACPREDICTOR™.

Agenda

INTRODUCTION TO FRACTURED RESERVOIR
Introduction.
Types of fracture and their effects.
Fractured anticlines and fractures on cores.
Fractures effect on reservoir quality.

MODELING FRACTURED RESERVOIRS TECHNIQUES
Discrete Fracture Network (DFN).
Continuous Fracture Model (CFM).
Fracture model calibration.

INTEGRATED WORKFLOW FOR MODELING NFR
Seismic attributes for fracture modeling.
3D application on the Tensleep data.
NATURALLY FR ActED RESERVoIR ENGINEERING

Production problems.
Well testing in fractured reservoirs.
Reservoir simulation in fractured reservoirs.