ONLINE: CARBONATE RESERVOIR CHARACTERISATION AND MODELLING (RES962)

Level: Skill / Advanced

Instructor: Sebastian Geiger & Patrick Corbett

This interdisciplinary course integrates modern reservoir modelling and reservoir engineering concepts to address and overcome the key challenges encountered when creating meaningful static and dynamic reservoir models of (fractured) carbonate reservoirs across a range of subsurface reservoir applications.

Course Structure: 10 modules of max. 2 hours each, delivered over 5 days

Each day will consist of 2 modules which will be no more than 2 hours in length, with ample time for delegates to break for refreshments.

DESIGNED FOR YOU, IF YOU ARE...

- A geomodeller, reservoir engineer or petrophysicist working on (fractured) carbonate reservoirs, wishing to build a strong foundation in characterising and modelling these complex reservoirs.

HOW WE BUILD YOUR CONFIDENCE

- You will understand how and why carbonate reservoirs matter for the energy transition and how oil and gas expertise can be applied to others subsurface applications such as CCS and geothermal energy
- By using case studies, you will review the challenges and best practices when characterising and modelling (fractured) carbonate reservoirs
- Discussions of the integration of core and log data for creating robust reservoir rock-typing approaches for carbonates
- It will be explained how fractures can be detected and incorporated in static and dynamic reservoir models
- Modern reservoir modelling approaches for carbonate reservoirs will be introduced, that allow us to capture their multi-porosity nature (not specific to certain software packages)
- You will explore the advantages and challenges when using digital rock-physics approaches for carbonate reservoirs (incl. simulation exercises)

- You will understand how uncertainties in carbonate reservoir modelling can be quantified using static and dynamic data, and how these data can be used for model calibration

THE BENEFITS FROM ATTENDING

By the end of this course, you will feel confident in your understanding of:

- Integrating core and log data for reservoir rock-typing in carbonates
- Detecting, characterising and modelling fractures in carbonates
- State-of-the-art carbonate reservoir modelling approaches and best practices
- The benefits of digital rock-physics workflows for carbonates
- Quantifying uncertainties in carbonate reservoir modelling

TOPICS

- The role of carbonate reservoirs in the energy transition
- Petrophysics for carbonate reservoirs
- Reservoir rock-typing for carbonates
- Detecting, characterising and modelling fractures
- Multi-scale and multi-porosity reservoir modelling and upscaling
- An introduction to digital rock-physics for carbonates
- Model ranking and clustering using static and dynamic data
- Uncertainty quantification for carbonate reservoir modelling