

E-learning: Quantitative Reservoir Characterization

Introducing the teacher

My name is Jaap Mondt and I am the facilitator/teacher for the E-learning course. In this note I will explain my role and what is expected of you and how we can get the most out of your time spent on it.

My role

My main activity will consist of giving feedback to your questions based on studying certain chapters of the book and to your submitted solutions to the assignments. The assignment feedback will either consist of additional questions, which aim to increase your understanding and which you are kindly asked to answer or remarks that parts of the answers are in error and need to be redone, in which case I will ask you to resubmit updated solutions (adding v2 or v3 to the filename). My feedback could be personal, then it will only be seen by you, or it could be of interest to all and I will put it in the ‘Discussion Forum’ or ‘News Forum’.

Your role

You should within the 3 months given, study the textbook chapters, solve the assignments and react to the feedback. If the next version of your answer/solution (max 2 re-submissions) is better, I will increase the score (only seen by you). In some cases, I might provide you the “official” solution, so that you at least understand the issue dealt with in the assignment. As another part of your activity you could put questions on the “Discussion Forum” and see if any of the other participants have an enlightening answer or provide feedback to items posted by others. I will also monitor it and make comments on the answers or give an answer myself. The questions and comments could include your name or not. In addition, you could contribute to the assignment issue by indicating errors or unclear statements or describing your own experience.

What kinds of Geophysical Data are used?

Various kinds of geophysical data are available. They are usually separated into Non-seismic and Seismic data. Non-seismic data (gravity, magnetics, electrical, electromagnetics, spectral, etc.) is the main data used in shallow subsurface applications (engineering, mapping pollution, archaeology, etc.) and at the early exploration stage in the search for oil, gas or minerals. Seismic is the main subsurface evaluation tool for the EP industry, but it has its limitations. Therefore, non-seismic methods are used successfully as complementary tools at the more mature exploration stages and even for monitoring production. In combination with seismic data they can significantly reduce the uncertainty in subsurface models as they measure different physical properties of the subsurface. Controlled Source EM, for example, responds to reservoir resistivity and can thus be used to differentiate between hydrocarbons and brine.

Business context

Geophysics provides technology with which we can "look" into the subsurface. It is a key enabler of many E&P activities and decisions. This course is designed to provide an understanding of the practice of Quantitative Reservoir Characterization and production monitoring. This will not only be done by studying the theoretical background of the methods (using a textbook), but above all by applying the theory in mainly Excel based assignments

Who should follow it

Geologists, Geophysicists, and Petroleum engineers, involved in exploration and development of oil and gas fields.

Requirements

A reasonable level of understanding of applied mathematics and physics is assumed

Course content

See the Quantitative Reservoir Characterization Program

Learning, methods, and tools

At the end of the course participants will have a good understanding of which methods are available for Quantitative Reservoir Characterization. This will enable them to specify which data is needed and which methods to apply.

For more information on courses go to www.epts.org

For information on the fee and registration please contact info@epts.org .