

RE3 INTRODUCTION TO COMPOSITIONAL RESERVOIR SIMULATION

(A practical workshop using ECLIPSE 300 & PVTi)

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Fees: 3500 €

DUBAI: 25– 29 March 2019

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COURSE OVERVIEW

To use compositional reservoir simulators efficiently, it is essential for reservoir engineers to have an insight on the fundamental and practical concepts. This course is designed to fulfill this wide need on an international scale. It is structured in such a way that theoretical teachings are supported by carefully designed tutorials. The course includes workshop sessions tackling simulation problems using PC based characterization and simulation programmes.

WHO SHOULD ATTEND

Reservoir simulation engineers, development geologists, and mathematicians who are involved in composition reservoir simulation studies. It is also beneficial for scientists interested in PVT modeling.

COURSE CONTENT

Reservoir Simulation Strategy:

- An Overview of Reservoir Simulation
- The Importance of Compositional Reservoir Simulation
- Step-by-step reservoir simulation procedure (Res. Simulation Walkthrough)
- The difference between Compositional and Black-oil simulation.
- Identifying the study objectives.
- Choosing between the compositional and Black-oil approach.

Compositional Reservoir Simulation:

- Theoretical background.
- Formulation and solution schemes.
- Flash calculations.
- Numerical dispersion.
- Advantages, Disadvantages, and Difficulties.

Equations of State (EOS):

- Thermodynamic review.
- PVT Experiments.
- Equation of State Generation.
- Component Lumping and Characterization.
- Viscosity correlation.

Compositional Process:

- First Contact Miscibility.
- Multiple Contact Miscibility.
- Vapourising Gas Drive.
- Condensing Gas Drive.
- Surface Tension Effects.
- Relative Permeability.

Compositional Reservoir Simulation Tutorials:

- The slim-tube experiment.

- Investigation of various recovery mechanisms:
 - A gas condensate Reservoir example.
 - A volatile oil reservoir example.

Round-up

In-house courses which may be of Interest

1. HTHP Wells and the Geologist.
2. Formation Pressure Evaluation.
3. Introduction to carbonate reservoirs.
4. Operation Geology.
5. Advanced Unix for Geoscientists.
6. Micro-station for Exploration & Prod.
7. Sedimentary Basin Systems for Hydrocarbon Exploration.
8. Artificial Lift and Flow Optimization.
9. Structural Styles in Petroleum Exploration.
10. 2-D & 3-D Seismic Data Interpretation.
11. Advanced Data Interpretation Technologies.

THE LECTURERS



Dr. H.M. Uba



Dr. O. Abu-elbasher

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BRIEF RESUME OF DR. UBA

Dr. H. M. Uba ARSM, M. Eng., DIC, Ph.D., is specialist in Compositional and black oil simulation. After graduating from Imperial College, London University in 1987, he did his Ph.D. and finished a Post-Doctoral research in Reservoir Simulation. He then joined INTERA (later GEOQUEST) as a senior reservoir engineer conducting full field reservoir simulation studies, and providing in-house training to reservoir engineers in several oil companies. He built reservoir models and conducted compositional simulation studies for many fields in the North Sea, North Africa, Middle-East and Asia; and taught reservoir simulation courses world-wide. He authored many papers in reservoir simulation.

Dr. Uba then joined Shell Nigeria in 1996 as a Reservoir Simulation Consultant where he completed several full field simulation studies, and trained Nigerian Engineers. He participated in field development studies within an integrated team giving advice on field development. Since 1998 Dr Uba has worked in many companies including Philips Petroleum, Saudi Aramco, Petroleum Development Oman and HESS Corporation in tasks such as appraisal, development planning, reservoir management, PVT and simulation studies. He has over 25 years of broad hands-on experience in the development of both "green" and mature fields covering black oil, gas, volatile oil and condensate systems.

Dr. Uba is a Free-lance consultant and an associate with PETRO-TEC