

# 2ND EDITION: DECISION BASED INTEGRATED RESERVOIR MODELING

– AN AAPG VIRTUAL EXPERIENCE –

virtual

WORKSHOP BROCHURE

## WHAT TO EXPECT FROM THE AAPG VIRTUAL EXPERIENCE

Due to the ongoing travel restrictions and differing guidelines from companies and organizations, the AAPG Decision Based Integrated Reservoir Modeling GTW will now be taking place virtually from 1 – 4 February 2021 and then on-demand anytime, from anywhere, and from any device for the next 2 months. The workshop will provide the best opportunity to safely connect with industry colleagues and peers while travel restrictions, social distancing, and health concerns persist. The new dynamic all-digital platform makes it simple for you to access all the great science, networking, and technology to help you stay on the cutting edge of petroleum geoscience. Our businesses and industry are experiencing difficult times, but overcoming obstacles is what explorers do – so let's do it together.

Benefits of our virtual events:

- Easily view the live presentations, ask questions and chat with other attendees
- Easily access the technical program and details of each presentation
- View the profiles of each presenter
- Participate in breakout discussion sessions
- Networking with other attendees and schedule one on one meetings
- Access to all the presentations for up to 2 months after the workshop
- Access to a dedicated sponsorship page
- Digital delegate bag and certificate of attendance

## WORKSHOP OUTLINE

Following the successful 1st edition of the Decision Based Integrated Reservoir Modeling GTW, the 2nd edition will focus on the latest technology and cost-effective approaches for building accurate and predictive 3D reservoir models for the oil and gas industry. Integrated reservoir modeling plays a pivotal role in the E&P workflow, where 3D quantitative geocellular models provide essential input for major oil and gas field development decisions. Static and dynamic data integration, new developments in 3D reservoir modeling techniques, and uncertainty quantification associated with reserves estimation, will be just a few topics, among others, to be tackled and discussed during the workshop.

### Benefits of Attending

Just like many industries, the oil and gas industry is embracing machine learning (ML) and artificial intelligence (AI) technology that is expected to fundamentally transform the way we quantitatively characterize and model subsurface reservoirs. Fascinating geoscience-related ML and AI technological innovations, including challenges and opportunities, will be presented and debated. Will ML and AI help us achieve enhanced accuracy and cost-effectiveness when it comes to reservoir properties prediction and 3D reservoir modeling in complex reservoirs with large multi-disciplinary data?

The workshop will also include case studies presentations underscoring how advanced reservoir modeling technology and rigorous multi-disciplinary data integration facilitated the successful execution of complex field increments. Discussions are also expected on the most common pitfalls to avoid.

### Who Should Attend?

Geologists, geophysicists, reservoir modelers, petrophysicists, reservoir simulation engineers, reservoir management engineers, project managers, data scientists, and team leaders working in exploration, field development, and technology innovation.

## WORKSHOP GUIDELINES

### FORMAT

The workshop will be 4 half days, consisting of oral presentations and breakout sessions where participants can discuss and investigate a specific theme that is of mutual interest. The workshop will commence each day at 12.30pm (Gulf Standard Time) and the first day will feature an inaugural keynote speech by a high-profile professional from the industry.

### ATTENDANCE

Registrations are invited from all relevant disciplines with experience and/or knowledge of the subject areas being addressed in the workshop. Registrations will be accepted on a first-come, first-served basis.

### REGISTRATION TYPES & FEES

Fees are inclusive of access to all the live presentations and on demand presentations for up to 2 months after the event.

- Member Fee: \$495
- Non Member Fee: \$595
- Faculty Member Fee: \$200
- Faculty Non Member Fee: \$250
- Student Member Fee: \$100
- Student Non-Member Fee: \$150

To register please visit: [middleeast.aapg.org](http://middleeast.aapg.org)

### REGISTRATION DEADLINE

To guarantee your seat, please make sure to register by **25 January 2021**.

### CANCELLATION POLICY

AAPG will refund the tuition, less a \$100 processing fee, if the request is received no later than 30 days prior to the workshop. Cancellations must be made in writing. The registrar will accept cancellation notices by telephone, but all such notices must be followed up by fax or e-mail. No refund will be made for cancellations received less than 30 days prior to a workshop being given. Nonpayment of tuition does not constitute automatic cancellation. If no cancellation notice is received by 30 days prior to a workshop, participants are liable for full tuition. AAPG reserves the right to cancel a workshop if enrollment is insufficient to ensure proper effectiveness. Substitutions for individuals can be made at any time. A paid enrollment may be transferred one time to a future workshop if the request is received prior to the 30 day cut-off date.

## TECHNICAL PROGRAM COMMITTEE

**Nazih Najjar (Chair)**  
Saudi Aramco

**Nicolas Leseur**  
Baker Hughes

**Behzad Alaei**  
Earth Science Analytics

**Aymen Haouesse**  
Emerson

**Vasily Demyanov**  
Heriot-Watt University

**Guillaume Caumon**  
Nancy School of Geology

**Mokhles Mezghani**  
Saudi Aramco

**Colin Daly**  
Schlumberger

**Wael Abdallah**  
Schlumberger

## TECHNICAL PROGRAM

### DAY 1 MONDAY 1 FEBRUARY

12.30-12.40 Workshop Chair's Welcome and Introduction

12.40-12.55 **INAUGURAL KEYNOTE:**  
**TBC, Saudi Aramco**

#### **SESSION 1: DBM CURRENT BEST PRACTICES - WHAT CAN BE ENHANCED?**

12.55-13.25 **SESSION KEYNOTE:**  
**Colin Daly, Schlumberger**  
How a Tight Combination of Geostatistics and Machine Learning Can Bring Significant Practical Advantages to Reservoir Modeling

13.25-13.50 **Jon Sætrom, Resoptima**  
Merging Machine Learning and Reservoir Physics to Make Better Decisions

13.50- 14.00 Coffee Break

14.00-14.25 **Mustafa Al Ibrahim, Saudi Aramco**  
Big Data in the Oil and Gas Industry: Current Practical Challenges and Opportunities

14.25-14.50 **TBC**

14.50-15.00 Coffee Break

15.00-16.00 Break Out Session

16.00 End of Day

### DAY 2 TUESDAY 2 FEBRUARY

#### **SESSION 2: MULTI-DISCIPLINARY DATA INTEGRATION - NEW APPROACHES**

12.30-13.00 **SESSION KEYNOTE:**  
**Gérard Massonnat, Total**  
The New Frontier: Predictive and Multi-Scales Reservoir Models from Process-Based Techniques

13.00-13.25 **Muhammad Kamran Qureshi, Schlumberger**  
Improved Facies Model by Using Novel Approach of Forward Stratigraphic Modeling: A Case Study

13.25-13.35 Coffee Break

13.35-14.00 **Vedad Hadziavdic, Wintershall Dea**  
TBC

14.00-14.25 **Hussain Alqattan, Saudi Aramco**  
Non-Linear Least Square Optimization of Stratigraphic Carbonate Models

14.25-14.35 Coffee Break

14.35-15.35 Break Out Session

15.35 End of Day

### DAY 3 WEDNESDAY 3 FEBRUARY

#### **SESSION 3: ML AND AI - PRACTICAL APPLICATIONS, RECENT INNOVATIONS AND AUTOMATION**

12.30-13.00 **SESSION KEYNOTE:**  
**Barry Zhang, Quantico Energy Solutions**  
Artificial Intelligence-Based Earth Models Deliver Breakthroughs from Seismic Multiple Suppression to Seeing Ahead of the Drill Bit

13.00-13.25 **Nicolas Leseur, Baker Hughes**  
Physics-Based vs. Data-Driven. A False Dilemma?

13.25-13.35 Coffee Break

13.35-14.00 **Eirik Larsen, Earth Science Analytics**  
AI-Assisted Reservoir Characterization on a Cloud-Native Data Platform

14.00-14.25 **Smaine Zeroug, Schlumberger**  
Injecting Physics, Domain Knowledge, and Geology in Data-Driven Approaches for the Interpretation of Subsurface Measurements Data

14.25-14.35 Coffee Break & Posters

14.35-15.35 Break Out Session

15.35 End of Day

### DAY 4 THURSDAY 4 FEBRUARY

#### **SESSION 4: CASE STUDIES - SUCCESSES AND PITFALLS**

12.30-13.00 **SESSION KEYNOTE:**  
**Tareq Zahrani, Saudi Aramco**  
Predictive Intelligence Drives the Future: The Unified Field Development Platform

13.00-13.25 **Sajeda Barni, Tatweer Petroleum**  
The Challenge of Modelling Horizontal Wells in a Thin Pay Carbonate Reservoir

13.25-13.50 **Mohammed Masrahy, Saudi Aramco**  
The Present is the Key to the Past, from Modern to Ancient, and from Rock Record to Subsurface Modeling: The Journey of Geological Reservoir Modeling

13.50-14.00 Coffee Break

14.00-15.00 Break Out Session

15.00-15.10 Workshop Wrap Up & Adjournment