

**ARMA | DGS | SEG**  
**International Geomechanics Symposium**  
 3–5 November 2020 | Virtual Event



# PROGRAMME

GREENWICH MEAN TIME  
(GMT)

**PLATINUM & STUDENT  
 REGISTRATION SPONSOR**



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## Tuesday, 3 November 2020

All sessions are in Greenwich Mean Time (GMT)

- 12:00 - 13:00 PRE-EVENT NETWORKING & TROUBLESHOOTING
- 13:00 - 13:15 **Welcome by Symposium Chairs**  
 13:15 - 13:35 **Opening Address by Ahmed Al Otaibi, Saudi Aramco**
- SESSION 1 IN-SITU STRESS AND NATURAL FRACTURES**  
 Session Chairs: Thomas Finkbeiner (KAUST) & Tariq Mahmood (Saudi Aramco)
- 13:35 - 13:55 **Mitigation of Sand Production and Estimation of Insitu Stress Orientation – An Experimental Investigation**  
 Deepak Gokaraju & Munir Aldin (MetaRock Lab)
- 13:55 - 14:15 **Mini-frac Tests in a Large-Diameter, Deep and Inclined Open Borehole**  
 Kevin Ma (BitCan, Canada), Xianxue Chen (Liaohe Oilfield)
- 14:15 - 14:35 **Forward Modeling of Natural Fractures within Carbonate Reservoir Damage Mechanics**  
 Xinpu Shen (China University of Petroleum)
- 14:35 - 14:50 NETWORKING BREAK – 15 min
- 14:50 - 15:20 **KEYNOTE: Optimizing Production from Unconventional Reservoirs: A Geomechanical Perspective**  
 Prof. Mark Zoback (Stanford University)
- SESSION 2 STRESS-DEPENDENT ROCK**  
 Session Chairs: Munir Aldin (MetaRock) & John Cain (Rockfield)
- 15:20 - 15:40 **Stress Dependent Permeability in Tight Gas Reservoirs**  
 Osman Hamid (Saudi Aramco)
- 15:40 - 16:00 **Modeling Hydraulic Response of Rock Fractures Under Effective Normal Stress**  
 Marwah AISinan & Hyung Kwak (Saudi Aramco), Hussein Hoteit & Xupeng He (KAUST)
- 16:00 - 16:20 **Mechanical Stratigraphy of Carbonate Mudrocks: Insights from Multiscale and Multidisciplinary Data**  
 Yaser Alzayer & Ahmed Alnahwi (Saudi Aramco)
- 16:20 - 16:40 **Modeling Sonic Logging in Presence of Stress-induced Anisotropy**  
 Timur Zharnikov (Saudi Aramco)
- 16:40 - 17:00 **DFIT Permeability Estimates and Quantitative Hydraulic Fracture Design Optimization: A Utica Case Study**  
 Garrett Fowler & Mark McClure (Resfrac), Craig Cipolla (Hess)
- 17:00 - 18:00 POST EVENT NETWORKING

## Wednesday, 4 November 2020

All sessions are in Greenwich Mean Time (GMT)

- 12:00 - 13:00 PRE-EVENT NETWORKING & TROUBLESHOOTING
- 13:00 - 13:30 **KEYNOTE: Drilling, Reservoir Characterization and Fracturing at the Utah FORGE Site**  
 Prof. John McLennan (University of Utah)
- SESSION 3 DRILLING GEOMECHANICS**  
 Session Chairs: Gallyam Aidagulov (Schlumberger) & Claire Gill (CGG)
- 13:30 - 13:50 **A Novel FEM-based Wellbore Stability Tool**  
 Rached Rached & Thomas Finkbeiner (KAUST)
- 13:50 - 14:10 **Assessment of Wellbore Rupture Modes and Influence of Bedding Plane Slip in Deviated Wellbores and Anisotropic Formations**  
 Alexandra Tsopela & Adam Bere (Rockfield)
- 14:10 - 14:30 **The Effect of Drilling Parameters on Wellbore Stability**  
 Khaqan Khan (Saudi Aramco)
- 14:30 - 14:50 **Elastic or Poroelastic? Dual Approaches to Underbalanced Drilling**  
 Michal Kepinski (Polish Oil & Gas Company)
- 14:50 - 15:00 NETWORKING BREAK – 10 min
- 15:00 - 15:30 **KEYNOTE: Uncertainty and Risk in Geoengineering**  
 Prof Herbert Einstein (Massachusetts Institute of Technology)
- SESSION 4 HYDRAULIC FRACTURING – OBSERVATIONS AND MODELING**  
 Session Chairs: Jesse Hampton (University of Wisconsin-Madison) & Francis Elisabeth (Saudi Aramco)
- 15:30 - 15:50 **Analysis of the Fracture Morphologies from a Laboratory Hydraulic Fracture Experiment on Montney Shale**  
 Earl Magsipoc & Giovanni Grasselli (University of Toronto)
- 15:50 - 16:10 **Impact of Bedding Planes Orientation on Fracture Propagation in Carbonated Rocks during Hydrofracturing**  
 Tariq K. Al Hashmi & Rashid K. Abu Al-Rub (Khalifa University), Rita Sousa (SIT)
- 16:10 - 16:30 **Understanding Hydraulic Fracture Propagation in Highly Heterogeneous Reservoirs**  
 Adam Bere & Glyn Richards (Rockfield)
- 16:30 - 16:50 **Characteristics of Hydraulic Fractures in Terms of the Matrix Permeability and the Natural Fracture Density**  
 Shahrzad Roshankhah & Kami Mohammadi (Caltech), Arman K. Nejad (independent consultant)
- 16:50 - 17:10 **Hydraulic Fracturing Propagation Prediction with Bottom Hole Pressure Diagnostic**  
 Dezhi Qiu & Rasouli Vamegh (University of North Dakota), Branko Damjanac (Itasca)
- 17:10 - 18:10 POST EVENT NETWORKING

## Thursday, 5 November 2020

All sessions are in Greenwich Mean Time (GMT)

- 12:00 - 13:00 PRE-EVENT NETWORKING & TROUBLESHOOTING
- SESSION 5 COUPLED RESERVOIR GEOMECHANICS**  
 Session Chairs: Osman Hamid (Saudi Aramco) & Juan Florez (Petroleum Development Oman)
- 13:00 - 13:20 **Application of the DFN-FEM Approach to Multistage Hydraulic Fracturing and Reservoir Production of a Bedding Influenced Naturally Fractured Shale**  
 Mark Cottrell (Golder), Hamid Pourpak (Total)
- 13:20 - 13:40 **Stimulation Sequencing to Improve Production from Stacked Well Development – A Delaware Basin Example**  
 Raj Malpani (Schlumberger)
- 13:40 - 14:00 **Modeling the Full Life Cycle of Unconventional Wells Using Reservoir Simulation: An Application Example**  
 Anuj Gupta, Mustafa Basri, R. Mesdour & C. Temizel (Saudi Aramco), K. Patel & Kiran Venepalli (CMG)
- 14:00 - 14:30 **KEYNOTE: Integrated Fracturing, Geomechanics and Reservoir Simulation: Using a Fit-for-Purpose Tool**  
 Prof. Mukul Sharma (University of Texas at Austin)
- 14:30 - 14:40 NETWORKING BREAK – 10 min
- SESSION 6 FIELD CASE STUDIES: VALUE OF GEOMECHANICS**  
 Session Chairs: Abdelwahab Noufal (ADNOC) & Xiaodong Ma (ETH Zürich)
- 14:40 - 15:00 **Deployment Strategies for Effective Hydraulic Fracturing Vertical, Highly Deviated and Horizontal Wells across Challenging Differential Depleted Tight Gas Formations in Oman**  
 Juan Chavez (Petroleum Development Oman)
- 15:00 - 15:20 **Role of GeoMechanics in Successful Pilot Evaluation of Unconventional Play in Kuwait**  
 Satya Perumalla (Baker Hughes), Taher Mohd. Gezeeri (Kuwait Oil Company)
- 15:20 - 15:40 **Geomechanical Effects Associated with PWRI Fracturing**  
 Mohammad Nassir & Dale Walters (CGG)
- 15:40 - 16:00 **Using Advanced Geomechanical Simulations for Exploration Risk Assessment and Development in Frontier Basins**  
 Rajesh Goteti (Saudi Aramco)
- SESSION 7 NEW TECHNOLOGIES AND AI**  
 Session Chairs: Mark Ma (SPWLA SAC) & Rashid Abualrub (Khalifa University)
- 16:00 - 16:20 **Geomechanical Analysis of Pressuremeter Testing in Oil and Gas Wells**  
 Khalid Alruwaili (Saudi Aramco), Andrea Lisjak (Geomechanica Inc.)
- 16:20 - 16:40 **New Empirical Correlations to Estimate the Mineralogical Compositions Based on X-ray Fluorescence Data Using Machine Learning Techniques**  
 Amjed Hassan & Abdulazeez Abdulraheem (KFUPM)
- 16:40 - 17:00 **Intelligent Sensor Selection under Uncertainty for the Detection of Fractures and Flow Patterns in Carbonate Reservoirs**  
 Klemens Katterbauer (Saudi Aramco)
- 17:00 - 17:15 **Closing Remarks by Symposium Chairs – 15 min**
- 17:15 - 18:15 POST EVENT NETWORKING