

EAGE

EUROPEAN
ASSOCIATION OF
GEOSCIENTISTS &
ENGINEERS



Second EAGE Workshop on Pore Pressure Prediction

19-21 MAY 2019 • AMSTERDAM, THE NETHERLANDS

- **Final Announcement & Programme**

WWW.EAGE.ORG



TECHNICAL COMMITTEE

Brent A. Couzens-Schultz	Shell
Toby Harrold (Co-chair)	Repsol
Akpofure Isiakpere (Co-chair)	Total
Luiz Marçal	Petrobras
Ilana Muller	Petrobras
Stephan Petmecky	CNOOC
Tom Sinclair	Shell
Mats Bjørndal Skaug	Total

OVERVIEW

Pore and fracture pressure prediction is at the heart of the well preparation workflow. Whether we are dealing with Deepwater Wells, Frontier Exploration Wells or Deviated Wells in depleted reservoirs, it is necessary to design and deliver safe and cost-effective wells. It is important to precisely anticipate overpressures, evaluating the slope of the pressure ramp-up and predicting whether reservoir pressures are in equilibrium, below or higher than the pressure of the overlying rock depending on the geological model.

Uncertainties exist at different stages of the pore and fracture pressure estimation workflow and are related to several factors including: calibration wells (proximity, similar geologic context), sources of overpressure (are there any sources other than disequilibrium compaction?), uncertainties in seismic velocities, prognosed lithology, LOT data, reservoir connectivity/geological model, nature of faults, sources of overpressures, normal compaction profile, overburden gradient, etc.

It is key to effectively communicate the resultant uncertainties in the PPF results so that all different parties involved take it into consideration: The geomechanics team for wellbore stability, well design engineers and drilling teams for the well design and execution and the exploration geologists for the prospect evaluation. Improving our predictions is equally as important as quantifying the uncertainties and communicating them. This requires that we, as an industry, improve our ability to eliminate technical gaps, effectively integrate information from many subsurface disciplines, integrating the uncertainties from all the processed-derived input parameters, and also develop closer interfaces with our Well teams.

AIM OF THE WORKSHOP

Following the very successful Pore Pressure Workshop held in Pau in 2017, the objective of this second workshop is to provide a forum to share technical practices, main challenges and propose solutions. It will also discuss current and future research efforts to resolve some of the main technical challenges in the field.

The audience concerned with this domain is wide: i.e., Exploration Geologists for the 3D/basin scale knowledge, Operation Geologists for well scale analysis and follow-up, Geophysicists for seismic velocities QC, Geomechanical Engineers for the rock failure analysis and Well Engineers directly involved in well design and execution. Specialists in all of these disciplines are thus invited to this forum.

Being at the heart of the pore pressure and fracture gradient prediction process, the pore and fracture pressure team are at the interface between the Geoscience and drilling teams and therefore the aim of the workshop is really to examine the main technical challenges that we face and efforts to resolve these challenges.

TECHNICAL PROGRAMME

Presentations | Monday 20 May 2019

08:00	Registrations & Welcome Coffee
08:30	Welcome Speech by Jean-Jacques Biteau (EAGE President)
ROOM: UVA 3&4	
Pore and Fracture Pressure Uncertainties I A. Isiakpere (Total), T. Sinclair (Shell)	
08:45	Mo PP 01 - Pressure, Seals and Traps: the Bases for the Petroleum System to Work Efficiently - J. Biteau ^{1*} ¹ Universities petroleum geology teacher
09:10	Mo PP 02 - Challenges of Pore Pressure Prediction for Unconventional Reservoirs in Active Operational Settings - I. Eggenkamp ^{1*} , A. Summitt ² ¹ Shell Canada Ltd., ² Shell Exploration and Production
09:35	Mo PP 03 - Impact of Geological Model Uncertainties on Pore Pressure Prediction: A GOM Case Study - A. Isiakpere ¹ , M.B. Skaug ^{1*} , L. Sirgue ¹ , B. Benazet ¹ , A. Chiappero ¹ ¹ Total
10:00	Mo PP 04 - Impact of Geologic Description on Pore Pressure and Well Design - J. Villinski ^{1*} ¹ BP Azerbaijan
10:25	Coffee Break
Pore and Fracture Pressure Uncertainties II A. Isiakpere (Total), T. Sinclair (Shell)	
10:55	Mo PP 05 - Quantification of Uncertainties in Pore Pressure Prediction: Is there any one Best Practice? - S. Bordoloi ^{1*} ¹ Baker Hughes
11:20	Mo PP 06 - Pore-pressure Prediction Using Multiresolution Analysis - H. Al Salmi ^{1*} ¹ Imperial College London
11:45	Mo PP 07 - Dealing with the Uncertainty in the Prediction of Fracture Gradient - K. Su ^{1*} , A. Onaisi ¹ ¹ Total
12:10	Mo PP 08 - Determination of the Fracture Pressure from CO2 Injection History - B. Bohloli ^{1*} , L. Grande ¹ ¹ Norwegian Geotechnical Institute (NGI)
12:35	Mo PP 09 - Reducing Uncertainty in Overpressure Prediction in the Norwegian Barents Sea - G. Markham ^{1*} , S. O'Connor ² , P. Milstead ³ , H. Rasmussen ³ ¹ Markham Geopressure Services Ltd, ² Global Geopressure Advice, ³ Spirit Energy Norge AS
13:00	Discussion
13:30	Lunch Break

ROOM: UVA 3&4	
Monitoring of PP/FG while Drilling and Updating the Model I T. Harrold (Repsol), L.M. Marcal (Petrobras)	
14:30	Mo PP 10 - Alternate Ways to Determine Pore Pressure Information: A Multi-Pronged Approach Enhances Conventional Real-Time Techniques - M. Blyth ^{1*} , N. Patel ¹ ¹ Schlumberger
14:55	Mo PP 11 - Managed Pressure Drilling for Pore Pressure Detection, Two Case Studies - J.M. Jimenez ^{1*} , T. Harrold ¹ , P. Rouille ¹ , G. Saceda ¹ ¹ Repsol
15:20	Mo PP 12 - Managed Pressure Drilling (MPD) – A Help or Hindrance for Real-time Pressure Detection in Exploration Wells? - T. In 't Veld-Brown ^{1*} , S. Petmecky ¹ , B. Wagner ¹ ¹ CNOOC Petroleum Europe Ltd
15:45	Mo PP 13 - PP Follow-up While Drilling: Seeking a Pressure Transition Zone in a Back Arc Basin - A. Isiakpere ¹ , M. Dougherty ^{1*} , B. Benazet ¹ ¹ Total
16:10	Coffee Break
16:40	Discussion
POSTER AREA	
Poster Session	
17:10	Mo P01 - Pore Pressure Uncertainty, Practices and Pragmatism for Well Planning - P. Rouill�� ^{1*} , T. Harrold ¹ , S. Martinez ¹ , G. Saceda ¹ , J.M. Jimenez ¹ ¹ Repsol
	Mo P02 - The Devil is in the Detail: Slight Overpressure Prediction in Offshore North-shelfal Area–East Java - E.A. Indah ^{1*} , M.R. Agus ² , K.P. Rizki ¹ , J.B.M.I. Jamin ¹ , A. Arii ³ , M.H. Lambok ² ¹ Petronas Carigali Muriah, ² Institut Teknologi Bandung, ³ SKK Migas
	Mo P03 - Pore Pressure Predictions in Ultra-Deepwaters of Sergipe Sub-Basin, NE Brazil - C. Cuartas ^{1*} , A. Barbosa ² , H.E. Mart��nez Carvajal ^{1,4} , A.F. Do Nascimento ³ , F.L.D. Santana ³ ¹ University of Bras��lia, ² Federal University of Pernambuco, ³ Federal University of Rio Grande do Norte, ⁴ Universidad Nacional de Colombia
	Mo P04 - Overpressure Mechanisms and Lateral Fluid Flow in the Taranaki Basin, New Zealand - S. O'Neill ^{1*} , S. Jones ¹ , P. Kamp ² ¹ Durham University, ² University of Waikato
	Mo P05 - Geological Interpretations of Vertical Effective Stress-Compressional Sonic Transit Time Cross-plots for Pore Pressure Prediction - D. Tassone ^{1*} ¹ Woodside Energy Ltd.
	Mo P06 - The Application of Double Normal Compaction Trend to Improve Overpressure Estimation in the East Java Basin - A. Ramdhan ^{1*} , T. Atarita ² , G. Titaley ² , A. Ardjuna ³ , L. Hutasoit ¹ ¹ Institut Teknologi Bandung, ² Pertamina EP, ³ SKK Migas
	Mo P07 - Holistic Geomechanical Approach to Analyze Pressure State of Complex Salt-Anhydrite Sequence: Improving Drilling Operations & Efficiency - A. Shinde ¹ , S. Perumalla ¹ , S. Bordoloi ^{1*} , A. Ghosh ¹ , S. Imtiaz ¹ , H. Singh ¹ , A. Ghadimipour ¹ , P. Chakrabarti ¹ , S. Benmamar ¹ , S. Saha ¹ , D. Upreti ¹ , T. Podder ¹ , S. Mitra ¹ ¹ Baker Hughes
19:00	Workshop Dinner
22:00	End of Day 1

Presentations | Tuesday 21 May 2019

08:00	Welcome Coffee
ROOM: UVA 3&4	
PP/FG in Environments with More than One Source of Overpressure I S. Petmecky (CNOOC), M.B. Skaug (Total)	
08:30	Tu PP 01 - Integrating Geomechanics and Geochemistry to Quickly Estimate Pore Pressure near Salt Diapirs - F. Ferrari ^{1*} , A. Consonni ¹ , E. Previde Massara ¹ , P. Tempone ¹ ¹ Eni S.p.A.
08:55	Tu PP 02 - Evidence of Extreme Overpressure Generated by Source Rock Maturation: Case Study, Deep-Offshore GOM, USA - F. Poeymarie ^{1*} , T. Rives ¹ ¹ Total
09:20	Tu PP 03 - Pore Pressure at the Post-Salt Albian Carbonates in Santos and Campos Basins - J.G. Carvalho ^{1*} , M.G.D.S. Araujo ¹ , F.G.D. Silva ¹ , M.B. Silka ¹ , H.E.E. Perez ¹ , M.V.S. Tavares ¹ , N.K. Azambuja ¹ , R.D.S. Moura ¹ , J.R.B.D. Moura ¹ , J.T.R.D. Freitas ¹ , M. Domingues ¹ , A. Moraes ¹ ¹ Petrobras
09:45	Tu PP 04 - Integrated Pore Pressure Prediction with 3D Basin Modeling - Z. Nagy ^{1*} , M.K. Baracza ² , N.P. Szabo ³ ¹ MOL - Hungarian Oil & Gas Plc, ² University of Miskolc - Research Institute of Applied Earth Sciences, ³ University of Miskolc - Department of Geophysics
10:10	Coffee Break
PP/FG in Environments with More than One Source of Overpressure II S. Petmecky (CNOOC), M.B. Skaug (Total Upstream Denmark A/S)	
10:40	Tu PP 05 - Pore Pressure Prediction in HPHT Wells - Y. Gorbunov ^{1*} ¹ Shell International Exploration and Production, Inc.
11:05	Tu PP 06 - Minimum Stress Trends in Stacked Mass Transport Deposits, Deepwater Guyana - T. Fitts ¹ , S. Hoffmann ¹ , S. Karner ¹ , M. Sundberg ^{1*} ¹ ExxonMobil Exploration Company
11:30	Tu PP 07 - PPFG Prediction in Complex Tectonic Settings: The North Alpine Thrust Front and Foreland Basin, SE Germany - M. Drews ^{1*} , H. Stollhofen ¹ ¹ Friedrich-Alexander University Erlangen-Nuremberg
11:55	Tu PP 08 - Identification of Two Loading Trends in Offshore Nile Delta, and the Implication on Pore Pressure Risking - T. Sinclair ^{1*} ¹ Shell
12:20	Tu PP 09 - FES Pressure Prediction Workflow Coupling Velocities with Geomechanical Modeling - M. Nikolinakou ¹ , M. Heidari ¹ , P. Flemings ¹ , A. Bere ^{2*} , J. Kato ² ¹ University of Texas at Austin, ² Rockfield Software
12:45	Discussion
13:15	Lunch Break

ROOM: UVA 3&4	
Future Needs and New Research I	
B.A. Couzens-Schultz (Shell), T. Harrold (Repsol)	
14:15	Tu PP 10 - From Well to Basin Scale Pore Pressure Prediction - Using the Full Potential of Seismic Velocities - A. Isiakpere ¹ , M. Juilla ¹ , L. Sirgue ^{1*} , B. Benazet ¹ ¹ Total
14:40	Tu PP 11 - 3D Pore Pressure and Geomechanics: Work Smarter and Faster Integrating Geoscience with Machine Learning - S. Green ^{1*} , E. Zabihi Naeini ¹ ¹ Ikon Science
15:05	Tu PP 12 - 2D vs 3D Geomechanical Modelling Comparison to Influence Pore Pressure and Fracture Gradient Analysis - J.J. Van der Linden d'Hooghvorst Rodríguez ^{1*} , T.W.D. Harrold ² , M.A. Nikolnakou ³ , O. Fernández Bellón ⁴ , P. Hernández Jiménez ² , A. Marcuello Pascual ¹ ¹ University of Barcelona, ² Repsol Exploración S.A., ³ Bureau of Economic Geology, ⁴ University of Vienna
15:30	Tu PP 13 - RhoVe T Method Empirical Velocity-Density-Temperature-Effective Stress Transform - M. Czerniak ^{1*} ¹ GCS Solutions, Inc.
15:55	Coffee Break
Future Needs and New Research II	
B.A. Couzens-Schultz (Shell), T. Harrold (Repsol)	
16:25	Tu PP 14 - Uncertainty Modelling of Minimum Horizontal Stresses and Porepressures in Deeply Buried Grabens. What's Next in Modelling? - A.E. Lothe ^{1*} , A. Grover ¹ , O. Roli ¹ , G. Leirdal ² , T. Golder Kristiansen ² ¹ SINTEF Industry, ² AkerBP
16:50	Tu PP 15 - Identifying Pore Pressure Related Cavings: An Integrated Model of Computer Vision and Machine Learning - C. Izurieta ^{1,2*} , L. Rocha ¹ ¹ UiS, ² Heriot-Watt University
17:15	Discussion
17:45	End of Day 2

IMPORTANT DATES

Late Registration Deadline	16 May 2019
Workshop on Pore Pressure Prediction	19-21 May 2019
Icebreaker Reception	19 May 2019
Workshop Dinner	20 May 2019

SOCIAL PROGRAMME

Icebreaker Reception

Sunday 19 May, 17:00 - 19:00
Location: Workshop Venue

Workshop Dinner

Monday 20 May, 19:00 - 22:00

A Workshop Dinner is being organized at:
RIVA Restaurant
Amstelboulevard 1, 1096 HH Amsterdam
The Netherlands
+31 (0)20-7602030
www.cafestauranttriva.nl

VENUE

Hotel Casa Amsterdam

Eerste Ringdijkstraat 4, 1097 BC Amsterdam
The Netherlands

SPONSORING

The Second EAGE Workshop on Pore Pressure Prediction offers excellent sponsoring opportunities to create high visibility. For more information about sponsoring, please refer to the 'Sponsor Guide' that is available on the workshop website or contact us at eage.events@eage.org.

Main Sponsors



Lanyards Sponsor



CONTACT

For further up-to-date information, please visit the event website via events.eage.org or contact the EAGE Europe Office at +31 88 9955055 or eage.events@eage.org.

EUROPE OFFICE
+31 88 995 5055
EAGE@EAGE.ORG

RUSSIA & CIS OFFICE
+7 495 640 2008
MOSCOW@EAGE.ORG

MIDDLE EAST/AFRICA OFFICE
+971 4 369 3897
MIDDLE_EAST@EAGE.ORG

ASIA PACIFIC OFFICE
+60 3 272 201 40
ASIAPACIFIC@EAGE.ORG

LATIN AMERICA OFFICE
+57 1 7449566 EXT 116
AMERICAS@EAGE.ORG

HEAD OFFICE • PO BOX 59 • 3990 DB HOUTEN • THE NETHERLANDS • +31 88 995 5055 • EAGE@EAGE.ORG

www.eage.org



join us on social media!