EAGE

EUROPEAN ASSOCIATION OF GEOSCIENTISTS & ENGINEERS

Sixth EAGE Borehole Geophysics Workshop

MAXIMISING DATA VALUE DURING THE ENERGY TRANSITION

9-11 NOVEMBER 2021 • DUBAI, UNITED ARAB EMIRATES & ONLINE

- **Second Announcement & Technical Programme**

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WORKSHOP OVERVIEW

As the world accelerates the transition to cleaner, renewable energy, hydrocarbons are still, and will remain for some time yet, a key part of the energy mix. One constant through these changes is the vital role in hosting technical workshops, and this includes the Borehole Geophysics workshop, now in its sixth iteration.

Borehole geophysics is a key component to link surface measurements with the reservoir; data acquired in the well provide high resolution geological and geomechanical measurements vital to calibrate and constrain the processing of surface seismic and other data across the field. The Sixth EAGE Borehole Geophysics workshop will bring together geophysicists and geoscientists from operating companies, contractors, equipment suppliers, academics, and anyone interested in promoting and celebrating borehole geophysics in all its forms. It will allow delegates to showcase their latest technology, and provide a valuable forum for networking with key individuals and organisations in this field.

Although these workshops may have previously focussed on Vertical Seismic Profiling (VSP), the workshop will be open to discussions covering a wide range of geophysical techniques, including VSPs. The technical programme will include 6 sessions:

- Calibration & Data Integration
- Machine Learning & AI
- Imaging & Inversion
- DAS Solutions
- Drilling Operations
- Monitoring & Sustainable Energy

On Monday, 8th November, there will be a full day online short course on *Geophysical Data Analysis in Julia, including Machine Learning*, led by Dr. Rajiv Kumar. Following this, the 3-day workshop programme will take place in person in Dubai, while also facilitating online participation for those unable to travel. In addition to keynotes and technical presentations, the programme will include interactive panel discussions that are an essential part of the proceedings, allowing comments and discussions on wider issues to capture the consensus of opinion amongst the delegates.

SHORT COURSE

Monday, 8 November
Online

Geophysical Data Analysis in Julia, including Machine Learning
Course instructor: Dr. Rajiv Kumar, Research Geophysicist at Schlumberger

In this hands-on course, an overview of the Julia language and of its applications to solving geophysical problems will be delivered through the use of a series of notebooks. Several key packages in the Julia ecosystem will be covered, which allow loading, viewing and analyzing geophysical data, with primary focus on seismic data. These include seismic data I/O, seismic data processing, modeling and inversion. Finally an introduction to seismic machine learning in Julia will be provided.

This course will be included in the workshop registration fee, all workshop participants will have access to the course at no extra cost. For external participants, there will be a fee to join the course. Please contact the EAGE MEA Office for more information.

TECHNICAL PROGRAMME

Short Course | Monday 8 November

Short Course: Geophysical Data Analysis in Julia, including Machine Learning - Instructor: Rajiv Kumar (Schlumberger)	

Oral Presentations | Tuesday 9 November

DAY 1	
10:30	**Welcome Address from Co-chairs**
10:45	**Keynote**
Calibration & Data Integration	
11:15	**BG01 - Advanced seismic calibration using multi-Walkaway VSP data, onshore UAE -** R. Guerra[1], P. Armstrong[2]*, I. Salim[1], G. Cambois[3], M. Waqas[3], M. Caeiro[3], A. Al Kobaisi[3] [1]Schlumberger; [2]Independent Consultant; [3]ADNOC - Upstream
11:40	**BG02 - Walkaway VSP in ultra-shallow water images deep targets, offshore UAE -** R. Guerra[1]*, I. Salim[1], M. Lal Khaitan[1], A. Mavromatidis[1], T. Leythaeuser[2], K. Jan[2] [1]Schlumberger; [2]ADNOC - Upstream
12.05	**BG03 - Title TBC**
12:30	**Lunch**
13:30	**BG04 - Multi-Physics Formation Evaluation of Shaly Sandstones Using Stochastic Inversion -** A. Shahin[1]*, M. Myers[2], L. Hathon[2] [1]University of Isfahan; [2]University of Houston
13:55	**BG05 - Borehole Fracture Identification using Fullwave Sonic Data Analysis and Borehole Image Logs -** M. Altayeb[1]*, C. Ayadiuno[1], A. Shaiban[1], M. Woldeamanuel[1] [1]Saudi Aramco
14:20	**BG06 - Integration of X-dipole sonic, Offset VSP and 3D seismic to calibrate a geological model -** S. Tcherkashnev[1]*, T. Kuptsova[1], V. Kim[1], S. Dobrynin[1], A. Alzanov[2], P. Kravets[2] [1]ASTO Geophysical Consulting Pty Ltd; [2]Nostrum Oil & Gas PLC
14:45	**BG07 - Geothermal Borehole Logging: State of the art, challenges, and Opportunities. -** D. Saitet[1]* [1]Kengen
15.10	**Panel Discussion on Calibration & Data Integration**
15.40	**Break**
Machine Learning & AI	
16:10	**BG08 - Deep neural networks for inversion of borehole microseismic data recorded by DAS -** D. Wamriew[1]*, E. Maltsev[1], R. Pevzner[2], D. Pissarenko[1] [1]Skolkovo Institute of Science and Technology; [2]Curtin University
16:35	**BG09 - VSP model building via deep learning -** Y. Ma[1]*, J. Zhang[1] [1]University of Science and Technology of China (USTC)
17.00	**Panel Discussion on Machine Learning & AI**
17.30	**End of Day 1**

Oral Presentations | Wednesday 10 November

DAY 2	
10:30	**Introduction to Day 2**
10:35	**Keynote**
Imaging and Inversion	
11:05	**BG10 - Processing and Imaging of a DAS VSP Pilot Survey at the Culzean Field, UKCS -** H. Moore[1]*, I. Iliev[1], S. Drummie[1], E. Kaszycka[1], V. Lesnikov[2], A. Merry[3], A. Mitra[3], M. Verliac[4] [1]CGG; [2]Total; [3]Total E&P; [4]Total SE
11:30	**BG11 - Ray-based Focused Vector Migration for Microseismic Applications -** J.B.U. Haldorsen[1]* [1]MagiQ Technologies
11:55	**BG12 - HTI anisotropy and 3D migration from Walkaround VSP -** S.A. Tcherkashnev[1]*, V.N. Danilenko[1], A.A. Sergeev[1], L.A. Shulkova[1], T.N. Kuptsova[1] [1]SPF JSC GITAS
12.20	**Lunch**
13:20	**BG13 - VSP Planning and Repeatability Evaluation Based on Comparison of Fresnel Zones -** S. Tcherakshnev[1], A. Shevchenko[2]* [1]ASTO Geophysical Consulting Pty Ltd; [2]PetroTrace
13.45	**Panel Discussion on Imaging & Inversion**
14.15	**Break**
DAS Solutions	
14:45	**BG14 - Borehole-driven 3D surface seismic data processing using DAS-VSP data -** G. Yu[1]*, Y. Zhang[2], Q. He[3], X. Cai[3], Q. Ding[3], J. Wu[3], W. Liu[3] [1]BGP Inc. CNPC; [2]Southwest Oilfield, CNPC; [3]Optical Science and Technology (Chengdu) Ltd.
15:10	**BG15 - MASW Analysis of an Active Landslide Using Active and Passive Data -** S. Cole[1]*, P. Clarkson[1], M. Karrenbach[1], V. Yartsev[1] [1]OptaSense
15:35	**BG16 - Distributed Acoustic Sensing vs. Geophone Accelerometer Measurements -** M.L. Khaitan[1]*, A. Sayed[1], A. Martinez[1], M. Useche[1], C. Duran[2], J. Araujo[2] [1]Schlumberger; [2]PetroSud
16:00	**BG17 - A Case Study of Hydraulic Fracturing Monitoring in Shale Gas Well Based on DAS -** S. An[1,3]*, X. Liang[2], G. Yu[1,3], D. Li[2], J. Wu[1,3], S. Wang[1,3] [1]BGP. CNPC; [2]Zhejiang Oilfield, CNPC; [3]Zyaobo Ltd.
16.25	**Panel Discussion on DAS Solutions**
17.00	**End of Day 2**

Oral Presentations | Thursday 11 November

DAY 3	
10:30	Introduction to Day 3
10:35	Discussion Session on Day 1 & 2
Drilling Operations	
11:05	**BG18 - Drillbit source focusing using seismic-while drilling data in a desert environment -** A. Aldawood[1]*, E. Hemyari[1], I. Silvestrov[1], A. Bakulin[1] [1]Saudi Aramco
11:30	**BG19 - First Look-Ahead VSP based Salt-Face and Sub-Salt Imaging for Exploration Well Steering in Offshore Abu Dhabi -** M. Waqas[1]*, A. Yahia[1], A.S. Al Kobaisi[1], W.H. Borland[2], M. Atif Nawaz[2] [1]ADNOC; [2]Schlumberger
11:55	**BG20 - Overburden velocities and indirect interpretation of sub-seismic faults from SWD VSP data in the Askeladd Field -** P. Tynan[1]*, B. Wang[2], M. Haverl[3], M. Cox[1], G. Foster[1] [1]Baker Hughes; [2]Three60 Energy, consultant at Equinor; [3]Equinor
12.20	Lunch
13:20	**BG21 - Seismic Logging While Drilling Evolution -** N. Kelsall[1]*, L. Euranie[1] [1]Schlumberger
13:45	**BG22 - Using Walkaway-VSP to predict the multi-directional targeting of horizontal wells a case study from Ordos basin,China -** C. Chen[1]*, D. Wang, Y. Li, J. Deng, Y. Wang, Z. Cai [1]BGP
14:10	**BG23 - Utilizing acoustic telemetry networks for potential Seismic-While-Drilling applications -** A. Ross[1]*, M. Verliac[1], A. Hawthorn[2], J.P. Van Zelm[2] [1]Total; [2]Baker Hughes
14:35	**Panel Discussion on Drilling Operations**
15.05	Break
Monitoring & Sustainable Energy	
15:35	**BG24 - Which baseline is the best? A year of continuous time-lapse DAS VSP reveals seasonal repeatability variation -** R. Isaenkov[1]*, R. Pevzner[1], S. Yavuz[1], K. Tertyshnikov[1], A. Yurikov[1], P. Shashkin[1], B. Gurevich[1], J. Correa[2], T. Wood[2], B. Freifeld[3] [1]Curtin University; [2]Lawrence Berkeley National Laboratory; [3]Class VI Solutions, Inc.
16:00	**BG25 - MsMr-VSP: A specialized VSP survey for high-resolution imaging of stratigraphic clinoforms for carbonate reservoir monitoring -** M.A. Nawaz[1]*, W.H. Borland[1], S. Ali[1], J.Z. Ahmed[2], M. Waqas[2], S.A. Khoori[2] [1]Schlumberger; [2]ADNOC

16:25	**BG26 - Time-lapse walkaway VSP acquisitions with optimal repeatability in CO2 EOR project, onshore UAE -** A. Abdel-Halim[1]*, F. Ofowena[2], R. Guerra[1], S. Ali[1], I. Salim[1], J. Vargas[2], J. Ahmed[2], M. Al Baloushi[2] [1]Schlumberger; [2]ADNOC
16.50	**Panel Discussion on Monitoring & Sustainable Energy**
17.20	**Closing Remarks & End of Workshop**

IMPORTANT DATES

Early Registration Deadline	9 October 2021
Regular Registration Deadline	8 November 2021
Short Course	8 November 2021

HYBRID WORKSHOP

The technical committee is looking forward to meeting again face-to-face in Dubai on 9-November 2021 for the sixth edition of this workshop. We understand however that travel plans are still tricky to make, and while we hope to once again welcome you all in person, EAGE will also hold the workshop in a hybrid format to allow online participation. More details on online participation will be shared.

SPONSORS

Lunch Sponsor

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Sponsorship packages for all budgets are available for this event, please visit the event website to learn about potential sponsoring opportunities.

CONTACT

For more information on this workshop, please contact the EAGE Middle East & Africa office via middle_east@eage.org or +971 4 369 3897.

See you in Dubai & online!

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