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

WWW.EAGE.ORG
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
11:15 BG01 - Advanced seismic calibration using multi-Walkaway VSP data, onshore UAE - R. Guerra1, P. Armstrong2, I. Salim1, G. Cambois1, M. Waqas2, M. Caeiro1, A. Al Kobaisi1, Schlumberger, Independent Consultant, ADNOC - Upstream
11:40 BG02 - Walkaway VSP in ultra-shallow water images deep targets, offshore UAE - R. Guerra1, I. Salim1, M. Lal Khaitan1, A. Mavromatis1, T. Leythaeuser1, K. Jan2, Schlumberger, ADNOC - Upstream
12:05 BG03 - Title TBC
12:30 Lunch
13:30 BG04 - Multi-Physics Formation Evaluation of Shaly Sandstones Using Stochastic Inversion - A. Shahin1, M. Myera1, L. Hatton2, University of Isfahan, University of Houston
13:55 BG05 - Borehole Fracture Identification using Fullwave Sonic Data Analysis and Borehole Image Logs - M. Altayeb1, C. Ayadiuno1, A. Shaiban1, Schlumberger, Independent Consultant, ADNOC - Upstream
14:20 BG06 - Integration of X-dipole sonic, Offset VSP and 3D seismic to calibrate a geological model - S. Tcherkashnev1, T. Kuptsova1, V. Kim1, S. Dobrynin1, A. Alzanov2, P. Kravets2, ASTO Geophysical Consulting Pty Ltd, Nostrum Oil & Gas PLC
14:45 BG07 - Geothermal Borehole Logging: State of the art, challenges, and Opportunities - D. Saitet1, 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. Wamniev1, E. Maltezer1, R. Pevzner1, D. Pissarenko1, Skolkovo Institute of Science and Technology, Curtin University
16:35 BG09 - VSP model building via deep learning - Y. Mai1, J. Zhang1, 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. Moore1, I. Iliiev1, S. Drumme1, E. Kasyuyka1, V. Lesnikov2, A. Merry1, A. Mitra1, M. Verlic1, CGG, Total, Total E&P, Total SE
11:30 BG11 - Ray-based Focused Vector Migration for Microseismic Applications - J.B.U. Haldorsen1, MagiQ Technologies
11:55 BG12 - HTI anisotropy and 3D migration from Walkaround VSP - S.A. Tcherkashnev1, V.N. Danilenko2, A.A. Sergeev1, L.A. Shulkova1, T.N. Kuptsova1, S.P. JSC GITAS
12:20 Lunch
13:20 BG13 - VSP Planning and Repeatability Evaluation Based on Comparison of Fresnel Zones - S. Tcherakshnev1, A. Shechenko1, ASTO Geophysical Consulting Pty Ltd, PetroSud
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. Yu1, Y. Zhang1, Q. He1, X. Cai1, O. Ding1, J. Wu1, W. Liu2, BGP Inc., CNPC, Southwest Oilfield, CNPC, Total, Optical Science and Technology (Chengdu) Ltd.
15:10 BG15 - MASW Analysis of an Active Landslide Using Active and Passive Data - S. Cole1, P. Clarkson1, M. Karrenbach1, V. Yartsev1, OptaSense1
15:35 BG16 - Distributed Acoustic Sensing vs. Geophone Accelerometer Measurements - M.L. Khaitan1, A. Sayed1, A. Martinez2, M. Uiseche3, C. Duran2, J. Araujo3, Schlumberger, PetroSud
16:00 BG17 - A Case Study of Hydraulic Fracturing Monitoring in Shale Gas Well Based on DAS - S. An1,3, X. Liang1, G. Yu1, O. Li1, J. Wu1, S. Wang3, BGP, CNPC, Zhejiang Oilfield, CNPC, Zyaobo Ltd.
16:25 Panel Discussion on DAS Solutions
17:00 End of Day 2
## Oral Presentations | Thursday 11 November

### DAY 3

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<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>10:30</td>
<td>Introduction to Day 3</td>
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<td>10:35</td>
<td>Discussion Session on Day 1 &amp; 2</td>
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### Drilling Operations

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<th>Time</th>
<th>Presentation</th>
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<tr>
<td>11:05</td>
<td>BG16 - Drillbit source focusing using seismic-while drilling data in a desert environment - A. Aldawood(^1), I. Silvestrov(^1), A. Bakulin(^2)</td>
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<tr>
<td>11:30</td>
<td>BG19 - First Look- Ahead VSP based Salt-Face and Sub-Salt Imaging for Exploration Well Steering in Offshore Abu Dhabi - M. Waqas(^*), A. Yahia(^1), A.S. Al Kobaisi(^2), W.H. Borland(^3)</td>
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<tr>
<td>11:55</td>
<td>BG20 - Overburden velocities and indirect interpretation of sub-seismic faults from SWD VSP data in the Askelladd Field - P. Tyman(^*), B. Wang(^1), M. Havia(^1), M. Cox(^2), G. Foster(^2)</td>
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### Lunch

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<tr>
<th>Time</th>
<th>Session</th>
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<tr>
<td>12:20</td>
<td>BG21 - Seismic Logging While Drilling Evolution - N. Kelsall(^*), L. Euranie(^1)</td>
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<td>13:45</td>
<td>BG22 - Using Walkaway-VSP to predict the multi-directional targeting of horizontal wells(_{\text{A}}) case study from Ordos basin, China - C. Chen(^*), D. Wang, Y. Li, J. Ding, Y. Wang, Z. Cai</td>
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<tr>
<td>14:10</td>
<td>BG23 - Utilizing acoustic telemetry networks for potential Seismic-While-Drilling applications - A. Ross(^*), M. Verlicic(^1)</td>
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### Monitoring & Sustainable Energy

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<td>15:35</td>
<td>BG24 - Which baseline is the best? A year of continuous time-lapse DAS VSP reveals seasonal repeatability variation - R. Isaenko(^*), R. Pevzner(^1), Y. Yavuz(^2), K. Tertyshnikov(^3), A. Yurikov(^1), P. Shashkin(^1), B. Gurevich(^1), J. Correa(^2), T. Wood(^2), B. Freifeld(^3)</td>
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### Closing Remarks & End of Workshop

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<th>Session</th>
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<tr>
<td>16:25</td>
<td>BG26 - Time-lapse walkaway VSP acquisitions with optimal repeatability in CO2 EOR project, onshore UAE - A. Abdel-Halim(^*), F. Ofowena(^2), R. Guerra(^1), S. Ali(^2), I. Salim(^3), J. Vargas(^2)</td>
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<tr>
<td>16:50</td>
<td>Panel Discussion on Monitoring &amp; Sustainable Energy</td>
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<td>17:20</td>
<td>Closing Remarks &amp; End of Workshop</td>
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## IMPORTANT DATES

<table>
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<tr>
<th>Event</th>
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<tbody>
<tr>
<td>Early Registration Deadline</td>
<td>9 October 2021</td>
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<tr>
<td>Regular Registration Deadline</td>
<td>8 November 2021</td>
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<tr>
<td>Short Course</td>
<td>8 November 2021</td>
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## 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

Schlumberger

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.