CONFERENCE OVERVIEW

The Integrated Reservoir Modelling Conference provides a platform to showcase best practices, case studies, technology and innovation in areas covering reservoir description, geological modelling, geostatistical, dynamic modelling and forecasting and uncertainty assessment.

This conference allows all professionals involved in reservoir modelling from IOCs, NOCs, service companies and academia to share and focus on the latest developments in integrated reservoir modelling and their implication for improving reservoir management and field development strategies.

Emphasis shall be on the field applications and validation of new technologies, case histories and examples of multi-disciplinary integration whilst aiming for time and cost efficiency.

This three-day conference will highlight the need of extracting more value through hand in hand subsurface integration during reservoir modelling.

GENERAL INFORMATION

Venue

The Conference will take place at the Pullman Kuala Lumpur City Centre Hotel and Residences (formerly known as Prince Hotel).

No 4, Jalan Conlay, 50450, Kuala Lumpur, Malaysia.
Telephone: (+60) 3/21708888
Fax: (+60) 3/21708808
Email: reservations@pullman-klcc.com
www.pullman-klcc.com
Conference registration hours
Monday 5 December 07:30-16:30 hrs
Tuesday 6 December 07:30-10:30 hrs

Catering
The following is included in the conference registration fee:
• Lunch on all three days of the conference
• Refreshment breaks on all three days of the conference
• Conference Dinner and Cocktail Reception (Tuesday evening, 6 December)

Note: Registration fee does not include hotel accommodation and/or the short course fee.

A/V Recording
Participants are strictly prohibited from using cameras, including mobile phone cameras and all other recording devices in the meeting session room during presentations.

TECHNICAL PROGRAMME (25 November 2016)

Oral & Poster Presentations
Monday 5 December

PULLMAN 2 BALLROOM
Integration of Seismic for Reservoir Modelling
C. Howells (Mubadala Petroleum)
08:20 Welcome Address - M.K. Embong* (Petronas Carigali) & K.K.R. Kolan (Cairn India Limited)
08:30 Keynote - Current and Future Trends in Integrated Reservoir Modelling - C.V. Deutsch* (University of Alberta)
09:45 MO S102 - Integration of Seismic Amplitude Information to Constrain Facies in Geo-Cellular Model - K.J.L. Konatham* (Cairn India Limited), F.N. Palha (Cairn India Limited), D.A. Dhanasetty (Cairn India Limited), K.S. Kumar (Cairn India Limited) & K.K.R. Kolan (Cairn India Limited)
10:15 Coffee Break
Model Calibration Using Temporal Data
S. Tyson (The University of Queensland)
10:35 MO S201 - An Analysis of the Seismic History Matching Objective Function - R. Chassagne (Heriot-Watt University), C. Aranha (Tusuba University) & C. MacBeth* (Heriot-Watt University)
11:05 MO S202 - History Matching Methodology Using an Optimal Neural Network Proxy and a Global Optimization Method - D.R. Guellil* (Texas A&M University at Qatar) & J. Bruyelle (Terra 3E)
11:35 Panel Discussion
12:05 Lunch
Utilizing Seismic Inversion
R. Lazar (Geomod)
13:00 MO S301 - Delineating Channel Sand Distribution and Reservoir Connectivity through Seismically Constrained Reservoir Modelling - T. Qureshi* (Sarawak Field)
13:30 MO S302 - Integration of Inverted Seismic Data in Modelling a Heterogeneous Lacustrine Porcellanite Reservoir - A. Sarkar* (Cairn India Limited), E.J. Phinney (Cairn India Limited), R. Reddy (Cairn India Limited), K. Pander (Cairn India Limited) & R. Guha (Cairn India Limited)
14:00 MO S303 - Simulation Enabled Petro-Elastic Modelling Methods in a Fractured Low Permeability Reservoir - G. Christopher* (Halliburton), T.S. Ramsay (Halliburton) & J.M. Yarus (Halliburton)

PULLMAN 2 FOYER
Poster Session 1
14:30 MO P101 - Stratigraphic Forward Modelling for Turbidity Sedimentation in Sinuous Canyon and Submarine Fan - L. Wan* (The University of Queensland) & S. Tyson (The University of Queensland)
14:40 MO P102 - Conventional Cores Allow Development of High Confidence Models for a Malay Basin Field - D.M. Ince* (Petronas), D.J. Shields (Petronas), H.G. Yeomans (Petronas), K. Mudaliar (Petronas) & A.H. Mubarak (Petronas)
14:50 MO P103 - From Imagination to Reality: Case Study of an Appraisal Well for CO2 Sequestration Project in Malaysia - S.N. Ameer Hamza* (Petronas), S.S. Ali (Petronas), M.A.A. Wahab (Petronas), S. Rashid (Petronas), M.R. Fadzil (Petronas Carigali) & A. Widyantya (Petronas)
14:55 MO P104 - A Novel Workflow in Discrete Fracture Network Modelling: A Case Study in Jingbei Oilfield, Northeastern China - J.L. Fang* (China University of Geosciences (Wuhan)), Z.H. Tang (China University of Geosciences (Wuhan)) & F.D. Zhou (School of Earth Sciences, University of Queensland)
15:05 MO P105 - Post Migration Azimuthal Residual Velocity Analysis of 3D Seismic Data from Yibal Huwaisah Field, Sultanate of Oman - M.K.A. Al Manthari* (Sultan Qaboos University), S. Al-Talbi (CGG-Veritas) & N. Narasimman (Sultan Gaboos University)
15:10 MO P106 - Continuous Capillary Pressure Estimation from Log Data Using Multi-Pore System Thomeer Model and Optimization Techniques - M. Mezhgan* (Saudi Aramco), M. Al-Ibrahim (Saudi Aramco) & J. Buting (Retired from Saudi Aramco)
15:20 MO P108 - Bringing High Resolution Chronostratigraphic Interpretation through to Reservoir Simulation - L. Van Den Brul* (Paradigm)
15:30 Coffee Break

PULLMAN 2 BALLROOM
Improving Reservoir Model Input
R.L. Kugler (University of Malaya)
16:50 MO S403 - Accurate Source Rock Effective Thickness Definition for Improved Volumetric Assessment - Y.Y. Lee* (Becip Technology Solutions), G. Monsequi (Becip Technology Solutions) & Z.Z. Harith (Becip Technology Solutions)
17:20 End of Day 1
### Oral & Poster Presentations

**Tuesday 6 December**

#### PULLMAN 2 BALLROOM

**From Seismic to Reservoir**
D.R. Guérillot (Texas A&M University at Qatar)

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:30</td>
<td>Keynote - Developments in Clastic Depositional Systems and their Implications for Reservoir Characterization and Modelling: A SE Asian Perspective - H.D. Johnson* (Imperial College London)</td>
</tr>
<tr>
<td>09:15</td>
<td>TU S101 - Representation of Sub-seismic Fault Zone Structure in Reservoir Modelling - T. Manzocchi* (University College Dublin), C. Childs (University College Dublin) &amp; M.S. Islam (University College Dublin (now Chulalongkorn University))</td>
</tr>
<tr>
<td>09:45</td>
<td>TU S102 - Improved Facies Distribution Using Seismic Derived Geobody - An Integrated Static Modelling Approach - A. Dhanasetty* (Cairn India Ltd.), S. Sarkar (Cairn India Ltd.), N. Pahwa (Cairn India Ltd.), R. Singh (Cairn India Ltd.), P. Kumar (Cairn India Ltd.) &amp; P. Singh (Cairn India Ltd.)</td>
</tr>
<tr>
<td>10:15</td>
<td>Coffee Break</td>
</tr>
</tbody>
</table>

**Velocity Model Uncertainties**
A. Nazhri (Vestigo Petroleum)

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:05</td>
<td>TU S202 - Depth Conversion and Depth Uncertainty Analysis on Buahluang Field - A Development Field offshore Thailand - R.B. Doshi* (CGG), S.J. Yap (CGG), R.S. Rathore (CGG), J. Vendrell (OPHIR THAILAND) &amp; H. Girling (OPHIR THAILAND)</td>
</tr>
<tr>
<td>11:35</td>
<td>Breakout Session</td>
</tr>
<tr>
<td>12:05</td>
<td>Lunch</td>
</tr>
</tbody>
</table>

**Reservoir Learning from Production**
S.V. Jean (Integrated GGRE Asia Sdn Bhd)

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>13:00</td>
<td>TU S301 - Well Log Correlation Adjustment Creates a Dynamic Model History Match - H.G. Yeomans* (Petronas), N.A. Radzi (Petronas), A. Mubaraki (Petronas) &amp; D. Shields (Petronas)</td>
</tr>
<tr>
<td>13:30</td>
<td>TU S302 - Evaluation of Reservoir Connectivity Using 4D Seismic and Production Data - Z. Yin (Heriot-Watt University), M. Azyenborg (Statoil ASA) &amp; C. MacBeth* (Heriot-Watt University)</td>
</tr>
<tr>
<td>14:00</td>
<td>TU S303 - Validating Remaining Oil Saturation from History Matched Simulation Model with Infill Wells in a Mature Oil Field - S. Sarkar (Cairn India Limited), A. Dhanasekty* (Cairn India Limited), S. Sulastra (Cairn India Limited), P. Singh (Cairn India Limited), P. Kumar (Cairn India Limited) &amp; R. Singh (Cairn India Limited)</td>
</tr>
</tbody>
</table>

#### PULLMAN 2 FOYER

**Poster Session 2**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>14:50</td>
<td>TU P202 - Reservoir Modelling Workflow of Central Luconia Carbonate Buildup - P.C. Doi* (Universiti Teknologi Petronas)</td>
</tr>
<tr>
<td>15:30</td>
<td>Coffee Break</td>
</tr>
</tbody>
</table>

**Effective Reservoir Modelling**
M. Al-Marhoon (Saudi Aramco)

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>15:50</td>
<td>TU S401 - The Concept of Right Modelling: Toward a More Efficient Use of the Reservoir Modelling Tool - R. Lazar* (GeomodL)</td>
</tr>
<tr>
<td>16:20</td>
<td>TU S402 - Project Time Savings by Simplifying Across Disciplines - S. Doi* (Sarawak Shell), M. Cheers (Shell), H.K. Tang (Shell), G. Warrich (Shell) &amp; D. Sos (Shell)</td>
</tr>
<tr>
<td>16:50</td>
<td>TU S403 - Quantification of Subsurface Uncertainty Using Experimental Design in a Deepwater Greenfield Development - S.N. Ng* (Kebabangan Petroleum Operating Company (KPOC))</td>
</tr>
<tr>
<td>17:20</td>
<td>End of Day 2</td>
</tr>
</tbody>
</table>
### Oral & Poster Presentations

**Wednesday 7 December**

#### PULLMAN 2 BALLROOM

<table>
<thead>
<tr>
<th>Time</th>
<th>Presentation</th>
</tr>
</thead>
</table>
| **08:30** | A Different Approach  
M. Willuweit (Emerson Automation Solutions)                                                                 |  
| **08:45** | WE S101 - A New Workflow for Generating Low Amalgamation, High Net: Gross GeoModels Constrained to Well Data  
D.A. Walsh* (iCRAG, University College Dublin) & T. Manzocchi (iCRAG, University College Dublin) |  
| **09:15** | WE S102 - Classifying Loss Circulation Events Using Integration Characterization of Natural Fractures Using Mechanical Earth Modelling and Image Logs  
A.M.N. AlNutaifi* (Saudi Aramco)                                                                 |  
| **09:45** | WE S201 - Effective Karst Modelling for Carbonate Build-ups in Central Luconia, Offshore Malaysia  
F.X. Xue* (Schlumberger Malaysia), G.S. Sen (Schlumberger Malaysia), M.A.B. Beg (Upstream Malaysia, Petronas) & H.H.A.B. Abu Bakar (Upstream Malaysia, Petronas) |  
| **10:15** | WE S202 - Framing Reservoir Model Uncertainty Via a Multi-disciplinary Scenario Based Approach: A Central Luconia Carbonate Reef  
D.J. Shields* (Petronas Carigali), A.H. Mohamad (Petronas Carigali), J.L. Wong (Petronas Carigali), A. Tarang (Petronas Carigali) & A. Amdan (Petronas Carigali) |  
| **10:45** | WE S203 - Forward Stratigraphic Modelling Approach for the Improvement of Facies Property Modelling: Case Study in Central Luconia  
| **12:05** | Lunch                                                                                                        |  
| **13:00** | Integrated Workflows - Static to Dynamic  
M. Willuweit (Emerson Automation Solutions)                                                                 |  
| **13:30** | WE S301 - A Practical Fast-Track Solution for Seismic History Matching  
C. MacBeth* (Heriot-Watt University), C. Gong (Heriot-Watt University) & R. Chassagne (Heriot-Watt University) |  
| **13:50** | WE S302 - Rejuvenation of Tight Clastic Gas Reservoirs in the Malay Basin through Integrated Static & Dynamic Modelling  
| **14:00** | WE S303 - The Big Loop™ - An Integrated and Automated Approach for Reservoir Management and Ensemble-based Production Optimization  
S. Walla* (Emerson Automation Solutions), S. Topdemir (Petrolo), M. Abd-Allah (Emerson Automation Solutions), A. Johanessen (Emerson Automation Solutions) & M. Lindanger (Emerson Automation Solutions) |  

---

#### PULLMAN 2 FOYER

<table>
<thead>
<tr>
<th>Time</th>
<th>Poster Session 3</th>
</tr>
</thead>
</table>
| **14:30** | WE P301 - Transforming Seismic Uncertainties to Reservoir Parameters: An Integrated Approach to Characterizing a Carbonate Reef  
| **14:35** | WE P302 - Rock Typing for a Carbonate Gas Field in Central Luconia Province  
| **14:40** | WE P303 - An Advanced Dual-Porosity Model for History Matching-Improvement of Production Data from the Canggung Granitic Basement  
H. Nguyen* (Petrovietnam Exploration Production Corporation) & T.V. Nguyen The-Vinh (Hanoi University of Mining and Geology) |  
| **14:45** | WE P304 - Reducing Reservoir Model Uncertainties with Geostatistical Inversion: A Case Study for Block 1, Turkmenistan  
R. Doshi* (CGG), A.A. Khalil (PCSB), R.B. Doshi* (CGG), A. Mutalib (PCSB) & A. Amdan (PCSB) |  
| **14:50** | WE P305 - Cohesive Approach to Identify Sand Channels within the Heterogeneous Units Of Burgan Reservoir by Integrating the Geology  
H.A. Abdulnazar (Kuwait Oil Company) & S. Al-Hazza* (Kuwait Oil Company) |  
| **15:30** | Coffee Break                                                                                         |  

---

#### PULLMAN 2 BALLROOM

<table>
<thead>
<tr>
<th>Time</th>
<th>Integrated Modelling for Production Optimization</th>
</tr>
</thead>
</table>
| **15:50** | WE S401 - Scale Handling from Geo Model to Flow Model with Focus on Transmissibility Upscaling and Fault Seal Upscaling Challenges  
H. Azmi* (Emerson Automation Solutions), M. Willuweit (Emerson Automation Solutions), A. Ramli (Emerson Automation Solutions) & T. Barkve (Emerson Automation Solutions) |  
| **16:20** | WE S402 - Integrated Static and Dynamic Study to Lift Remaining Potential in Gulf of Suez Oil Field  
A. Yadov* (Deutsche Erdoel AG), A. El-Hawai (Deutsche Erdoel AG), E. Omara (Suez Oil Company (SUCO)) & B. Bisso Bi Mba (Deutsche Erdoel AG) |  
| **16:50** | Wrap-up Session                                                                                                  |  
| **17:20** | Closing remarks                                                                                                |
SOCIAL PROGRAMME

Cocktail Reception
Tuesday 6 December, 17:30–18:30 hrs
Venue: Foyer area of Pullman 2 Ballroom

Conference Dinner
Tuesday 6 December, 18:30–21:00 hrs
Venue: Tai Zi Heen Restaurant, Level 2, Pullman Hotel KLCC

Tai Zi Heen has always been a crowd favorite spot when it comes to the finest Southern Chinese cuisine. All food is certified ‘HALAL’.

Please feel free to make your way to the restaurant located within the hotel after the cocktail reception.

SHORT COURSE

Non-Linear Geostatistics For Reservoir Modelling
(two-day short course)
8-9 December 2016, 09:00–17:00 hrs
Venue: Pullman 11, Level 3, Pullman Hotel KLCC
Instructor: Prof. Steve Tyson and Dr Sebastian Hörning

Course description
This course will show how to test for linear spatial dependence and introduce the concepts of non-linear geostatistics. Attendees will develop an excel spreadsheet and a python notebook that can be used for spatial data analysis and non-linear stochastic simulation. Existing geostatistics algorithms based on the kriging matrix can be shown to underestimate the connectivity of extreme values because they assume a linear spatial dependence model.

Moreover, the estimation of uncertainty based on these techniques uses the kriging variance, which is not dependent on the values of the spatially distributed variable. It can also be shown that these uncertainty estimates are often implausible. This course will explain the reasons why most spatial variables in geoscience do not have a linear spatial dependence, even after monotonic transformations and the impact of this in the estimation of petrophysical properties.
Instructor
Prof. Steve Tyson joined CCSG as Professor of Sub-Surface Modelling after more than 30 years in the petroleum industry. He leads CCSG geoscience research projects and has a particular interest in mathematical modelling, reservoir modelling and the spatial distribution of geological architectures. He was appointed an Honorary Research Fellow of the Australian School of Petroleum in 2003; an indication of the respect and experience he has within this area of research. Professor Tyson also works closely with The University of Queensland’s School of Earth Sciences.

Second Instructor
Dr Sebastian Hörning heads the Spatio-Temporal Reservoir Analytics group in the Centre for Geoscience Computing at the University of Queensland. His research covers spatial statistics problems over a range of scales; he has worked on basin scale spatial dependence and on the spatial models from micro CT images. In all cases he has found compelling evidence indicating that linear spatial dependence is rare. Tests for linear dependence are simple, even with conventional geostatistical software. However, new techniques had to be developed to estimate spatial variables with more complex spatial dependence structures. Dr Hörning joined the University of Queensland in 2016 from the University of Stuttgart where he worked with Professor Andras Bardossy on the development of non-linear geostatistics.

Integrated Reservoir Modelling (two-day short course)
8-9 December 2016, 09:00–17:00 hrs
Venue: Pullman 10, Level 3, Pullman KLCC
Instructor: Prof. Dr Michael C. Pöppelreiter

Course Description
This outcrop-based course provides an overview of the integrated reservoir modelling process, tools and tasks. The data set is a tertiary carbonate reservoir that exposes participants to integrated reservoir modelling with a hands-on approach. A conceptual reservoir model and a digital reservoir model will be constructed on paper and digitally. Common sedimentological techniques such as section logging, gamma ray measurements and interpretation of aspect ratios from photo panels and maps will be demonstrated and practiced. All data required to build models are actual industry data. Uncertainty of all data sets will be assessed and alternative models constructed. QC of data versus interpretation is an integral part of the course and there will be a strong emphasis on the stratigraphic correlation framework and structural model building. Property modelling and volumetric will be carried out interactively as a team exercise; team interaction will be a fundamental component of this course.

Instructor
Prof. Dr Michael C. Pöppelreiter is the current Director of the South East Asian Carbonate Research Lab (SEACaRL) and Shell Chair in Petroleum Geology at the Department of Geosciences of Universiti Teknologi Petronas (UTP), Malaysia. Prof. Pöppelreiter studied at the Mining University of Freiberg, Germany; the Postgraduate Research Institute of Sedimentology, United Kingdom; and the University of Tubingen, Germany, where he earned a PhD in 1998. He has written 25 publications and two books on borehole image logs and reservoir geology.

EARTHDOC
The abstracts of this conference are available online at EarthDoc. EarthDoc is EAGE’s online geoscience database and contains over 60,000 event papers and scientific articles. To view the abstracts, go to www.earthdoc.org and log in with your EAGE membership number.

LIABILITY CLAUSE
The technical programme is subject to change. If and when this occurs, EAGE shall not be liable for damages, expenses, personal injury or loss, except when caused by gross fault or negligence on the side of EAGE. EAGE’s liability is expressly limited to the amount paid for this event by the participant. Please note that EAGE reserves the right to cancel the conference due to low participation. In this case, payment will be refunded in full. EAGE shall not be responsible for airfares, hotel or other costs incurred by registrants.