# Basin and Petroleum Systems Modelling: Best Practices, Challenges and New Techniques

## 28-30 September 2021

*Hybrid Conference, The Geological Society and Zoom, BST*

### Provisional Programme

| Day One | |
|---|---|
| **08.30** | **Registration** |
| **08.45** | **Welcome** |
| **09.00** | **Keynote: The evolution of basin modelling and petroleum systems analysis through time**<br>**Thomas Hantshel, Schlumberger** |
| | **Session One: Data and Technology 1** |
| **09.45** | **Interactive overpressure prediction**<br>Jack Stalnaker, *Belmont Technology Inc* |
| **10.15** | **Investigation of migration dynamics in Sergipe-Alagoas Basin (Brazil): insights from a global sensitivity analysis powered by machine learning**<br>Mathieu Ducros, *Kognitus* |
| **10.45** | **Kerogen typing from residual carbon data utilising a novel Rock-Eval programmed pyrolysis derived plot**<br>Michael Sims, *Imperial College London* |
| **11.15** | **BREAK** |
| | **Session Two: Data and Technology 2** |
| **11.45** | **Applying Top-Down Reservoir Modelling (TDRM™) philosophy to basin modelling and its implications for carrying subsurface uncertainty**<br>Herbert Volk, *BP* |
| **12.15** | **How to Reduce the Exploration Risk? - application of experimental design, response surfaces**<br>Alcide Thebault & Marie Callies, *Beicip-Franlab, Rueil-Malmaison, France* |
| **12.45** | **Constraining the thermal history of the Exmouth Sub-basin (North West Shelf, Australia)**<br>Oliver Schenk, *Schlumberger* |
| **13.15** | **LUNCH** |
| | **Session Three: Integrating Data and Processes in BPSM – new challenges and new approaches in rift margins** |
| **14.15** | **Automated Basin modelling of the Vøring volcanic margin**<br>Sébastien Gac, *University of Oslo* |
| **14.45** | **Basin modeling of thermicity and diachronism of South Atlantic rifted margin: an example from the presalt of Brazil**<br>Johannes Wendebourg, *Total E&P Americas* |
| **15.15** | **Estimating Net Erosion in Sedimentary Basins: Examples from the Barents Sea**<br>Karthik Iyer, *GeoModelling Solutions GmbH, Zurich, Switzerland* |
| **15.45** | **BREAK** |
| **16.00** | **Panel Discussion** |
| **17.00** | **End of day one** |

| Day Two | |
|---|---|
| **08.30** | **Registration** |
| **08.45** | **Keynote: Modelling generation to accumulation**<br>**Zhiyong He, *Zetaware*** |
| | **Session Four: Using subsurface data and basin modelling to predict source rock characteristics** |
| **09.30** | **An Integrated Basin Modeling Study to Predict UEP & Organofacies Types of Upper Jurassic Tithonian-centered Source Rock near the Thunder Horse Field Area, the U.S. Deepwater Gulf of Mexico**<br>Michael Cheng, *BHP* |
| **10.00** | **Integration of Seismic Inversion and Petroleum Systems modeling - Mapping the Kudu Source Rock in the Walvis and Orange Basins, Offshore Namibia**<br>Christian Nino, *Galp* |
| **10.30** | **Prediction of Aptian to Albian-aged potential source rocks, offshore Suriname, from integration of local and regional subsurface data**<br>Andrew Dyson, *Cairn Energy* |
| **11.00** | **BREAK** |
| | **Session Five: Breaking convention: Biogenic and unconventional modelling case studies** |
| **11.30** | **Discrepancies in petroleum systems modeling and petroleum production within liquid rich unconventional resource plays: Understanding external contribution and fluid chemistry**<br>Michael Abrams, *Imperial College London* |
| **12.00** | **Maturation history modeling of the petroleum systems of the Williston Basin, USA**<br>Sarah Gelman, *USGS* |
| **12.30** | **Modelling Biogenic Gas Production at the Basin Scale: Application to the Bay of Biscay**<br>Martina Torelli, *IFP Energies Nouvelles* |
| **13.00** | **Biogenic gas source rock potential evaluation. Case study: Block AD7 Myanmar**<br>Carolina Olivares, *CGG* |
| **13.30** | **LUNCH** |
| | **Session Six: Communicating results - dealing with predicted risk & uncertainty** |
| **14.30** | **Probabilistic Prospect Charge, Seal and Phase Assessment – Extending Basin Modelling into the Probabilistic Domain**<br>Martin Neumaier, *Imperial College London & Ucon Geoconsulting* |
| **15.00** | **Some novel thoughts on risk analysis**<br>Douglas Waples, *Sirius Exploration Geochemistry* |
| **15.30** | **BREAK** |
| | **Session Seven: Communicating results - interactive exercise** |
| **15.45** | **MINE THE GAP (Cognitive therapy for basin modellers)**<br>**Guy Loftus, K2V** |
| **17.00** | **End of day two** |

| Day Three | |
|---|---|
| | **Registration** |

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|---|---|
| **08.30** | **Welcome** |
| **08.45** | **Keynote: The value of integrated workflows**<br>**Neil Frewin, *Shell*** |
| | **Session Eight: Linking basin modelling with other disciplines - novel applications of BPSM techniques** |
| **09.30** | **Recent advances in computational geosciences**<br>Boris Kaus, *Institute of Geosciences, Johannes-Gutenberg University Mainz (Germany) & SmartTectonics GmbH* |
| **10.00** | **Petroleum system modeling approaches for marine mineral systems**<br>Lars Rüpke, *GEOMAR Helmholtz Center for Ocean Research Kiel, Germany* |
| **10.30** | **Choices in benchmarks, models, and guestimates of hydrocarbon columns**<br>Ebbe Hartz, *AkerBP, Norway* |
| **11.00** | **BREAK** |
| | **Session Nine: Basin modelling for CO2 and CCS** |
| **11.15** | **The Impacts in Pressure Stabilization and Leasing Acreage for CO2 Storage from Utilizing Oil Migration Concepts**<br>Melianna Ulfah, *Jackson School of Geosciences, The University of Texas Austin* |
| **11.45** | **Time-lapse seismic imaging and fluid dynamics of CO2 storage at the Sleipner Field, North Sea**<br>Nicky White, *University of Cambridge* |
| **12.15** | **Multi-scale cap rock assessment for CO2 storage, insights from the Northern Lights project (Norwegian Continental Shelf)**<br>Renata Meneguolo, *Equinor* |
| **12.45** | **Applying hydrocarbon migration modelling principle to the simulation of the capillary-dominated flow of sequestered CO2 in saline aquifers: Case study from the Sleipner storage operation**<br>Geovani C. Kaeng, *Halliburton* |
| **13.15** | **LUNCH** |
| | **Session Ten: Geothermal, hydrogen and other applications** |
| **14.15** | **Energy transition as a new challenge for basin modelling**<br>Marie-Christine Cacas-Stentz, *IFPEN* |
| **14.45** | **The simulation of hydrogen storage in saline aquifers**<br>Niklas Heinemann, *University of Edinburgh* |
| **15.15** | **Probabilistic Modelling of Present-Day Geothermal Heat Flow: Lessons for Future Exploration**<br>Alex Dickinson, *Newcastle University* |
| **15.45** | **Break** |
| **16.00** | **Panel discussion** |
| **17.00** | **End of Conference** |