

First EAGE Workshop on Advanced Seismic Solutions and New Exploration Concepts to Unlock the Potential of the Caribbean Shelf

24-25 OCTOBER 2019 · BOGOTÁ, COLOMBIA

First Announcement and Call for Abstracts

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WORKSHOP OVERVIEW

EAGE is proud to announce its first Workshop "Advanced Seismic Solutions and New Exploration Concepts to Unlock the Potential of the Caribbean Shelf", due to be held in Bogotá, Colombia, from 24 – 25 October 2019. Here, the "Continental Shelf" is loosely defined as comprising offshore sedimentary basins covered by bathymetry less than 200 meters. Although the primary focus of the workshop shall be on the shallow-water Caribbean shelf, strong links will be maintained with the adjacent areas of interest to explorers; i.e. the continental slope & rise, and abyssal plain at the distal shelf edge, and the proximal transition zone.

In the last decade, and more recently, headlines have been dominated by significant discoveries and exploration commitments in *deep-water* blocks of the Western Caribbean. In contrast with more prolific and mature continental-shelf basins (e.g. GoM, North Sea), where deepwater exploration activities naturally followed a flat-lining "Creaming Curve" of the adjacent continental platform, there are significant areas of the Caribbean Continental Shelf that have effectively been by-passed to date.

This is broadly due to a low exploration success ratio in these shallow Caribbean waters to date. In turn, this is typically attributed to unresolved exploration challenges, high associated subsurface risk and geological uncertainties of current exploration concepts, petroleum systems and plays, combined with low coverage of 3D seismic surveys and a generally low final image quality of available 2D/3D seismic data volumes, in shallow-water environments compared to deep-water blocks.

The workshop will provide an excellent opportunity for geoscientists, asset teams, and decision-makers from the region and around the world to learn and exchange knowledge about 1) advancements in seismic technologies and solutions from data acquisition to inversion and enduser applications on any shallow-water seismic data, 2) future possibilities and new exploration concepts for the Caribbean Shelf, and 3) the role of seismic technologies and integration with other disciplines in overcoming shallow-water subsurface challenges.

Bogotá, as seat of the Colombian Agencia Nacional de Hidrocarburos (ANH) and regional power-house of recent Caribbean offshore exploration, provides an ideal location for discussion of innovative topics in oil and gas exploration on the Caribbean Shelf. Continuous bidding rounds for shallow- and deep-water offshore blocks in the Colombian Caribbean basins have recently attracted a fresh plethora of E&P companies, including some of the leading players in the industry, in search of new exploration opportunities in the country's offshore Caribbean areas. With a large exploration effort anticipated in the oncoming years, there can be no better place than Bogotá to exchange ideas and knowledge to improve our ability to image and explore the subsurface of the shallow-water Caribbean Shelf. For workshop participants, the buzzing atmosphere and bohemian city lifestyle make Bogotá an especially appealing environment in which to meet and network.

TOPICS

New Exploration Concepts on the Caribbean Shelf

- Prospects, Leads and Discoveries on the Caribbean Shelf
- Emerging plays in the Caribbean province
- New Petroleum Systems
- Exploration case studies
- Shelf to Deepwater reservoir systems
- Transition-Zone Exploration
- Geological and geophysical challenges
- Emerging technologies and new aplications of

Understanding Geological Risk and Uncertainties of Caribbean Plays

- Basin entry-scale exploration risk identification and mitigation
- Technology and its impact on: Seismic Image Quality, Well Design, Formation Evaluation
- Reservoir quality prediction

Operational Challenges - Risks and Uncertainties

 Colombian offshore basins in the Caribbean Continental Shelf, differences between South and North (with emphasis on operational risks and lessons learned) Integrated approaches to risk mitigation

Role of Seismic Technologies and Integration in Overcoming Subsurface Challenges

- Technical and Operational Challenges
- High pressures management
- Geohazards identification and evaluation

Shallow-water Seismic Acquisition Solutions

- Ocean-bottom Seismic Cables and Nodes
- Multi-measurement Streamer Acquisition
- Broadband Acquisition Solutions: Deep Tows, Slanted Streamers, and More
- Specialized Marine Acquisition Designs for Shallow-water Surveys

Seismic Pre-migration Processing in Shallow-water Environments

- General Strategies: Parallel Time and Depth Imaging Sequences
- Random & Coherent Noise Attenuation From Severe to Subtle
- Broadband Processing (LF): Adaptive Source and Receiver Deghosting Techniques
- Broadband Processing (HF): Bandwidth Extension, Maximizing Vertical Resolution
- Model-Based Surface-Related Multiple Elimination (SRME) in Shallow Waters



- Integration of Multiple Attenuation Techniques Different Classes of Multiples, Short- vs. Long-period
- AVO/Inversion QC during time-domain, pre-migration processing sequence
- Advanced QC methods

Shallow-water Velocity Modelling and Depth Imaging – From Surface to Basement

- Surface-wave Modelling & Inversion Scholte- and Guided Waves
- Early-Arrival or Refraction Full-waveform Inversion (FWI), including Data Preconditioning
- High-resolution and Reflection Full-waveform Inversion (FWI)
- Imaging with Multiples and Mirror Imaging Ocean Bottom and Towed-streamer Seismic
- High-resolution Tomography Gridded vs. Layer-based
- Geological & Well Constraints for Tomographic Depth Imaging – Fault & Structural Constraints
- Advanced Pre-stack Depth Migration (PreSDM)
- Q-Tomography and Q-PreSDM; Kirchhoff, Beam, RTM
- Least-squares PreSDM Applications in shallow-water environments
- Anisotropy Analysis and Modelling Multi-parameter Tomography (Epsilon, Delta, Vp)
- Multi-physics: Joint Inversion and Integration with Non-Seismic Geophysical Datasets

Near-seabed and Overburden Characterization – Integration of Methods

- General Strategies: Early Geohazard Imaging & Assessment with Exploration Seismic Data
- Surface-wave Inversion
- High-resolution (2ms) Mirror Imaging
- · Near-seabed Characterization

- Geo- and Drilling Hazard Assessment
- 2D and 3D Site Surveys

ABOUT BOGOTÁ, COLOMBIA

Located at 2500 AMSL in the center of the country, on the Eastern Mountain Range.

Rated the 5th place among the best cities in America to do business (America economy, 2016), headquarter of multinational and important events such as fairs, congresses, exhibitions and conventions, host of recognized universities and research centers, make the city a space for strengthening and sharing the technical and innovative knowledge about the Oil industry.

This cosmopolitan city offers its visitors a wide list of gastronomical activities, nightlife, commercial and urban tourism and beautiful wetlands and hills.

SPONSORING

EAGE offers excellent sponsoring opportunities to create high visibility for companies and institutions and are available to suit all budgets. Please visit our website for further details. To contact us via americas@eage.org. 57 1 4232948

HOW TO REGISTER

We recommend that you register via the online registration form on the EAGE event website (https://events.eage.org/en/2019/shallow-water-colombia/registration)
However, a downloadable registration form, which should be completed and returned to the EAGE Americas, is also available on the event's page



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