65th Annual Symposium



RIO DE JANEIRO, BRAZIL May 18-22, 2024



Society of Petrophysicists and Well Log Analysts

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Welcome to Rio The 65th Annual SPWLA Symposium

It is with great pleasure and enthusiasm that the SPWLA Chapter Brazil extends its warmest welcome to the SPWLA 65th Annual Symposium in Rio de Janeiro, Brazil. Set against the backdrop of breathtaking landscapes and the vibrant energy of the city, this event marks the 10 years of official existence of the Brazil Chapter, being the first SPWLA international symposium held in Brazil and the second in South America. This promises to be a remarkable gathering of industry professionals and experts from around the world.

In recent decades, Brazil has emerged as a prominent player in the oil and gas industry, ranking among the top ten oil producers worldwide. The exploration and production of the turbidite reservoirs in the Campos Basin and the pre-salt carbonates in the Santos Basin have led to numerous advancements in technology, revolutionizing various aspects of geosciences and engineering, particularly in petrophysics and formation evaluation. Brazil's onshore infrastructure, coupled with the revival of production by major operators, has created a new market for mature fields, fostering the growth of specialized companies and revitalizing the sector.

Moreover, Brazil's potential extends beyond traditional oil and gas endeavors. The onshore infrastructure already in place can represent a new frontier for the development of CCUS and hydrogen storage projects. The petrophysics community has a lot to contribute to these areas, leveraging their expertise to explore the potential of geological carbon capture and storage, as well as the production and storage of hydrogen, which are vital components in the transition to a more sustainable energy future. Brazil's vast resources and expertise make it a promising candidate for advancing these technologies on a larger scale.

Furthermore, the recent oil discoveries in Guyana have transformed the Brazilian Equatorial Margin into an exciting frontier for oil and gas ventures. This new exploration area opens opportunities for further growth and innovation in the industry. Brazil's oil and gas sector stands out as one of the most prolific globally, attracting industry professionals and experts from around the world.

During the symposium, first-class speakers will delve into a wide range of topics, including formation evaluation, exploration, production, CCUS and hydrogen storage, and emerging technologies. Engage in enlightening panel discussions, informative workshops, and presentations that will foster innovation, collaboration, and drive the industry forward.

Welcome to Rio The 65th Annual SPWLA Symposium

We have carefully selected the Sheraton Grand Rio Hotel & Resort as the venue for this important event, which will take place from May 18th to 22nd, 2024. The hotel offers an excellent selection of meeting rooms for dual sessions, workshops, society events, and luncheons. With its breathtaking views of Leblon and Ipanema beaches, the hotel provides accommodation that can cater to all attendees. Additionally, field trips and social events will be organized providing ample opportunities for networking, and forging valuable connections.

Beyond the professional endeavors, we invite you to immerse yourself in the beauty and cultural richness of Rio de Janeiro. Known as the "Marvelous City," Rio captivates visitors with its iconic landmarks, vibrant neighborhoods, and warm hospitality. Take a moment to explore the world-famous Christ the Redeemer statue, which overlooks the city from atop Corcovado Mountain. Stroll along the stunning beaches of Copacabana and Ipanema, where you can savor the beauty of the coastline and experience the lively Carioca lifestyle.

As you embrace the symposium, we encourage you to take advantage of the exceptional networking opportunities with colleagues and peers. Share insights, exchange ideas, and establish connections that will shape the future of the oil and gas industry. In addition, Rio de Janeiro offers a wealth of cultural experiences, from samba shows and traditional Brazilian cuisine to the historical charm of the Santa Teresa neighborhood and the exhilarating atmosphere of the Carnival.

We are honored to host the 65th Annual Symposium in such a captivating destination and look forward to your support and participation. Join us in Rio de Janeiro in 2024 as we unlock new horizons in the oil and gas industry and immerse ourselves in the warmth and beauty of this remarkable city.

Warm regards, Lucas Abreu Blanes de Oliveira President of SPWLA Brazil Chapter and Symposium General Chair

KEYNOTE ADDRESS

SPEAKER: Mr. Jonilton Pessoa - Executive Exploration Manager – Petrobras DATE: Monday, May 20, 8:15 am ROOM: Gavea A

Jonilton Pessoa is a geologist, graduated from the Federal University of Rio Grande do Norte, with a master's degree in Geophysical Sciences from the Federal University of Bahia and an MBA in Economics from FGV in Rio de Janeiro. He joined and began his professional career at Petrobras in 1987, working as an Interpretation Geophysicist in the Campos Basin, offshore Brazil. In 1998, he took over management of the seismic processing team, having been appointed as manager of Deep Water Interpretation in 2000, still in the Campos Basin. From 2004 to 2007, at



Jonilton Pessoa (Petrobras)

the company's headquarters, he led the interpretation teams for the Campos and Espírito Santo basins, on the Brazilian East Margin, when he was appointed General Manager of Exploratory Interpretation for the Southeast Basins. From 2016 to 2020, he served as General Manager of Applied Geophysics. In 2020, he assumed the General Management of Geological and Geophysical Data Processing Technology. He is currently the Executive Exploration Manager.

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SYMPOSIUM HIGHLIGHTS

All functions will be held in the Sheraton Grand Rio Hotel & Resort unless otherwise indicated. Please confirm exact location and timing prior to event from information provided at registration.

Saturday, May 18 – 7:00am – 5:00pm

Registration Field Trip: Pre-salt reservoir analogues: lagoon and subaerial carbonate Workshop 2: Optimized Reservoir Performance: UDAR-Well Placement and High Angle /Horizontal Well Petrophysics Workshop 3: Digital rock Applied to Formation Evaluation – upscaling insights from pore to well log scale Workshop 4: New Advances in NMR Techniques and Applications

Sunday, May 19 – 7:00am – 5:00pm

Registration Field Trip 2: Core Workshop -Exploring Pre-Salt Carbonate Reservoirs: A Comprehensive Tour of Petrographic, Geochemical, and Petrophysical Insights Workshop 5: Towards the effective use of borehole acoustics; Understanding, validating and utilizing sonic measurements Workshop 6: Data Analytics – Understanding the Tools – Limitations and Opportunities Workshop 7: Energy Transition Petrophysics – What is new, What is the Same Student Paper Competition (ISPC) Speaker Preparation Center Technology Committee Meeting Icebreaker Reception

Monday, May 20 - 7:00am - 5:00pm

Speaker Meeting with VP Technology and Session Chairs Speaker Preparation Room Registration Exhibition Opening Remarks and Keynote Address Spouse/Partner Tour: Technical Sessions AM Annual Business Meeting and Lunch Technical Sessions PM Poster Session Area Monday Evening Social Event 6:30pm – 9:30pm

SYMPOSIUM HIGHLIGHTS

Tuesday, May 21 - 7:00am - 5:00pm

Speaker Meeting with VP Technology and Session Chairs Speaker Preparation Room Registration Exhibition Spouse/Partner Tour Dual Technical Sessions AM Awards Ceremony Luncheon Dual Technical Sessions PM Poster Session Area Tuesday Evening Social Event 6:30pm – 9:30pm

Wednesday, May 22 - 7:00am - 5:00pm

Speaker Meeting with VP Technology and Session Chairs Speaker Preparation Room Registration Exhibition: 8:30am – 3:00pm Spouse/Partner Tour Dual Technical Sessions AM Leadership Luncheon Dual Technical Sessions PM Poster Session Area Closing Remarks and Door Prize Drawing

Thursday, May 23 - 8:00am - 5:00pm (Post Symposium)

NMR SIG Conference; Brazil at the Baker Hughes Rio Energy Technology Innovation Center (RETIC)

GENERAL INFORMATION

Note: All events will take place at the Sheraton Grand Rio Hotel & Resort unless indicated otherwise.

REGISTRATION

Registration for all attendees, spouses and guests will be located in the Sheraton Grand (Lobby)

DATE AND TIME:

Saturday, May 18 Sunday, May 19 Monday, May 20 Tuesday, May 21 Wednesday, May 22 7:00 am - 5:00 pm 7:00 am - 5:00 pm 7:00 am - 5:00 pm 7:30 am - 5:00 pm 7:30 am - 12:00 noon

STUDENT PAPER COMPETITION

Sunday, May 19. 8:00 am – 5:00 pm

Papers will be judged and cash prizes will be awarded to the winners at the end of the competition. Students are encouraged to attend the Tuesday luncheon to be recognized during the Annual Awards Ceremony. ROOM: Leme

EXHIBITION

Exhibit hours are:	
Monday	8:30 am - 5:00 pm
Tuesday	8:30 am - 5:00 pm
Wednesday	8:30 am - 3:00 pm.
Please note: For safety consideration, no one under the age of	13 will be allowed in
the exhibit hall.	
ROOM: Foyer	

OPENING SESSION AND KEYNOTE ADDRESS

Monday, May 20, 8:00 am

Join us as General Chair, Lucas Abreu Blanes de Oliveira delivers the SPWLA 65th Annual Logging Symposium opening remarks and the introduction of Keynote Speaker; Jonilton Pessoa. Immediately following the address, SPWLA Vice President of Technology, Robert "Bob" Gales will officially open the technical sessions. ROOM: Gavea A

GENERAL INFORMATION

SPEAKER MEETING WITH VP TECHNOLOGY AND SESSION CHAIRS

Pre-conference meeting for All Speakers and Session Co-Chairpersons on the morning of your presentation. The Committee will have a Q&A session, test the equipment, and explain the program procedures. Monday through Wednesday, 7:00 am – 8:00 am ROOM: Urca

SPEAKER PREPARATION CENTER

All speakers are encouraged to view their presentation in the Preparation Center and have their file checked by the projectionist at their earliest convenience. The Preparation Center will provide a computer for speakers to load their PowerPoint[®] presentations onto the symposium's computer network and verify compatibility and consistency with the system. The Preparation Center is open Sunday 9:00 am to 5:00 pm, Monday through Wednesday, 7:00 am to 5:00 pm ROOM: Urca

POSTER PRESENTATIONS

Posters are on display Monday, Tuesday and Wednesday with a dedicated session each day. ROOM: Vidigal

EXHIBITING COMPANIES











HALLIBURTON























EXHIBITOR LOCATION

Organization Name	Booth Assigned Number
AspenTech Subsurface Science & Engineering	6
Baker Hughes	27
CNLC	2
Eriksfiord	4
Gaia Earth Group	5
Geoactive Limited	7
Geologix Limited	16
GEOTEK	13
GOWell	15
H2 Laboratories	16
Halliburton	28
Intertek Westport Technology Center	9
KAPPA Engineering	11
NoHiddenPay LLC	10
Oliden Technology, LLC	14
Petromac	24
ROGII, INC	3
SLB	25



Multi Booths Units – Ipanema Room

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GENERAL FUND

Maxwell Dynamics, Inc.

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TECHNOLOGY COMMITTEE

VICE-PRESIDENT TECHNOLOGY-CHAIRMAN

Robert H. (Bob) Gales, Halliburton

VICE-PRESIDENT TECHNOLOGY ELECT- CO-CHAIRMAN

Harry Xie, Core Lab

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Javier Miranda, DeGolver and MacNaughton/SPWLA Regional Director Chinwendu Mogbo, Asharami Energy Femi Onita. Shell Marco Pirrone, ENI SpA Shelby Plitzuweit, OXY Maxim Podolyak, Core Lab Matthew G. Reppert, Neptune Energy Priscila Reuters, Equinor Marvin Rourke, GoWell Chris Skelt, Independent Consultant Nelson (NSA) Suarez Arcano, Halliburton/SPWLA Regional Director Xiaoming Tang, China University of Petroleum Bruno Valle, 3R Petroleum Marie Van Steene, SLB Daniela Van Wyck, Halliburton Lalitha Venkataramanan, SLB Rodolfo Victor, Petrobras Chicheng Xu, Aramco Americas Irada Yusufova, Equinor Qiong Zhang, UESTC John Zhou, Maxwell Dynamics

May 20-22, 2024

NOTE: All technical sessions will be held at the Sheraton Grand Rio Hotel & Resort. Photography and video/audio recording of any kind are strictly prohibited in all areas, including technical sessions, workshops, and exhibition hall.

MONDAY - May 20th

- 8:00 Opening Remarks - Chairman - Lucas Abreu Blanes de Oliveira, Petrobras
- 8:15 Keynote Speaker - Mr. Jonilton Pessoa - Executive Exploration Manager. Petrobras
- 9:00 Introduction of Technical Sessions - Vice President of Technology -Robert (Bob) Gales
- 9:15 Break (25 mins)

Session 1 (Gavea A)

GENERAL – ACCOUSTICS TECHNOLOGY AND APPLICATIONS

Chairpersons: Matt Blyth (SLB) and Tiago de Bittencourt Rossi (Petrobras) Sponsored by:



- 9:40 SPWLA -2024-0001 A Case Study Utilizing Cost-Effective LWD Ultrasonic Imaging Technology in Unconventional Asset Development Pingjun Guo, Brett Zastoupil, Laurin Musso, Steven Sowers, and Mohammed Bousaleh, ExxonMobil
- 10:00 SPWLA-2024-0002 Calibration of the Anisotropic Rock Physics Model and Its **Petrophysics and Geomechanics Applications** Sergey Vorobiev, ITOIL-SV; Timur Zharnikov, Aramco Innovations; Vladimir Vorobyev, ITOIL-SV; Christopher Ayadiuno and Zainab Ibrahim, Saudi Aramco
- 10:20 SPWLA-2024-0003 Biot Coefficient From Sonic Logs With Laboratory Data Calibration – A Brazillian Presalt Field Case Study Marcio José Morschbacher, Guilherme Fernandes Vasquez, Marcos Pozzato Figueiredo, Julio Cesar Ramos Justen, Flavia de Oliveira Lima Falcao, and Ana Lucia Matias Maria, Petrobras
- SPWLA-2024-0004 The Evaluation and Correction of Photoelectric Factor in 10:40 the Presence of Large Standoff and Heavy Muds

Bair V. Banzarov, Andreas Vogt, and Nicklas Ritzmann, Baker Hughes

11:00 SPWLA-2024-0005 A Novel Method for Evaluating Formation Fracturing Effect Utilizing Acoustic Logging

Siyi Li, Wenhui Chen, Xuekai Sun, Hao Zhang, Liming Jiang, Kun Shao, Hao Sun, Yanwei Zhao, Peng Shi, and Zimeng Zhou, Acoustic Research Center, China National Logging Corporation

11:20 SPWLA-2024-0006 Successful Avoidance of Production Hazards From Subseismic Faults on a Multiple Horizontal Well Project in Permian Basin, Texas Derek Buster, ProdiGeology, Inc, Karim Sabaa, Amer Hanif, and Ehsaan Nasir, Baker Hughes

Session 2 (Gavea B)_

SPOPSE: DIGITAL ROCK PHYSICS FOR FORMATION EVALUATION AND GENERAL: CORE-LOG VALIDATION AND RESERVOIR UNDERSTANDING

Chairpersons: Katrina Cox (Core Laboratories) and Rodolfo Victor, Petrobras Sponsored by:



9:40 SPWLA-2024-0007 Insights of Core Analysis Data Interpretation by Use of Digital Rock Physics

Mohammed Fadhel Al-Hamad and Denis Klemin, SLB; Shouxiang Mark Ma, Saudi Aramco; Wael Abdallah, SLB

- 10:00 SPWLA-2024-0008 Mapping Mineralogy to 3D Digital Rock Using Multimodal Multidimensional Image Registration Mohamed Sarhan, Lori A. Hathon, and Michael T. Myers, University of Houston; Alon Arad, Automated Analytics
- 10:20 SPWLA-2024-0009 Experimental Study on the Change of Resistivity of Synthetic Methane Hydrate Under Different Saturation and Clay Composition Conditions

Yin Lu, Wang Meng, and Zhu Jiangmei, China Oilfield Services Limited

10:40 SPWLA-2024-0010 Influence of Salt Concentration and Type on Dielectric Permittivity of Rocks

Zullkuf Azizoglu and Zoya Heidari, The University of Texas at Austin

11:00 SPWLA-2024-0011 Core Cleaning for Wettability Restoration – How Clean Is Clean?

Hussain Al Qatari, Halliburton; Shouxiang Mark Ma, Aramco; Ahmed Hafez and Taha Okashah, Halliburton

11:20 SPWLA-2024-0012 Wettability Quantification in Rock Components via Water Adsorption Isotherms

Isa Silveira de Araujo and Zoya Heidari, The University of Texas at Austin

11:40 -1:10 LUNCH (Business Meeting) – (Carioca)

Session 3 (Gavea A)

SPORSE: PREPARATION FOR THE ENERGY TRANSITION -REDUCING SUBSURFACE RISK IN MODELING AND MONITORING?

Chairpersons: Cleyton Carneiro (University of Sao Paulo)and Irada Yusufova (Equinor) Sponsored by:



1:10 SPWLA-2024-0013 Shallow Aquifer Sampling for Carbon Capture and Storage – Development of a Low Toxicity Tracer to Enable Low Contamination Water Sampling in a Water Based Mud System

Michael Taplin, BP; Emilie Peyret, SLB; Phillip Jackson and Kirsty Hitchen, BP

1:30 SPWLA-2024-0014 Incorporating Emissions Into Wireline Formation Evaluation Risk Assessments

Ron Ford, Mike Hanson, Lee Hyson, Luke Miller, Hamish Munro, Xavier Perez, and Guy Wheater, Gaia Earth Group

1:50 SPWLA-2024-0015 Importance of Well Integrity Measurements Throughout the CCS Project Lifecycle Dirk Valstar, Alec Nettleton, Erik Borechardt, Hugo Costeno, Geoffrey Landry

Dirk Valstar, Alec Nettleton, Erik Borechardt, Hugo Costeno, Geoffrey Landry, and Robert Laronga, SLB

2:10 SPWLA-2024-0016 Quantifying the Impacts of Reservoir Geochemistry and Pore Structure on the CO₂ Diffusion and Leakage in Organic-Rich Mudrock Formations and Caprocks Ibrahim Gomaa, Zoya Heidari, The University of Texas at Austin; Asem Hassan,

Ibrahim Gomaa, Zoya Heidari, The University of Texas at Austin; Asem Hassan, University of Arizona

2:30 SPWLA-2024-0017 Comparative Analysis of Time Scaling Creep In Two Different Salts

Talha Hassan Khan, Michael T. Myers, Lori A. Hathon, and Gabriel C. Unomah, University of Houston

Session 4 (Gavea B)_

SURFACE DATA LOGGING – ROCK AND FLUID ANALYSIS

Chairpersons: Priscila Caldas (Halliburton) and Neal Cameron (Geolog)

1:10 SPWLA-2024-0018 LiOBIA: Object-Based Cuttings Image Analysis for Automated Lithology Evaluation

Tetsushi Yamada, Simone Di Santo, Karim Bondabou, Ajeet Prashant, Andrea Di Daniel, Laura Su, Matthias Francois, Khalid Ouaaba, Daniel Lockyer, and Romain Prioul, SLB

1:30 SPWLA-2024-0019 MICP-Based Petrophysical Classification of Complex Carbonate Reservoir Rocks

André Luís Fernandes da Silva de Souza and Rodolfo A. Victor, Petrobras; Fábio A. Perosi, Universidade Federal do Rio de Janeiro

- 1:50 SPWLA-2024-0020 Reservoir Fluid Properties From Cuttings: An Innovative Synergy of Gel Permeation Chromatography and Data Analytics Alexandra Cely and Tao Yang, Equinor ASA; Eric Michael and Julian Moore, Applied Petroleum Technology
- 2:10 SPWLA-2024-0021 Optimize Drilling Decisions Based on Real-Time Detected Alkene and Hydrogen at Surface

Amjad Kharaba and Khalid Qubaisi, Saudi Aramco; Richard Hewitt and Milton Sanclemente, Geolog International

- 2:30 SPWLA-2024-0022 Use of Spectral Gamma Ray and Lithogeochemical Logs Combined With XRD Data to Identify Mg-Clay Mineral Sequences in Barra Velha Formation (BVE) – Lower Cretaceous of the Santos Basin Paulo R.A. Netto, Petróleo Brasileiro S.A., and Manuel Pozo, Universidad Autónoma de Madrid
- 2:50 Break (10 mins)

Session 5 (Vidigal)

POSTER SESSION 1 (3:00pm – 3:35pm)

Chairperson: Mark Bacciarelli (Weatherford), Tom Bradley (Baker Hughes), Zoya Heidari (University of Texas at Austin), and Mauro Viandante (SLB)

3:00 SPWLA-2024-0023 Enhanced LWD Quadrupole Shear Processing Provided Reliable Shear for Reservoir Characterization: A Case Study From Deepwater Gulf of Mexico

Lei Wu and Alisa Kukharchuk, Baker Hughes; Gary Ostroff and Brian LeCompte, Murphy Exploration & Production

3:00 SPWLA-2024-0024 Uncertainty Estimation for UltraDeep Azimuthal Resistivity Measurements Using Machine Learning

Hui Xie, Pontus Loviken, Gordana Draskovic, Nguyen Thanh Nhan, Keli Sun, Mike Bower, and Kent Harms, SLB

- 3:00 SPWLA-2024-0025 Integrated Workflow Utilizing LWD GR-Resistivity, Advanced Mudlogging, and Well Dynamic Data Enabled Petrophysical Parameters Modeling to Assist Geosteering in UBCTD Mohd A. Ibrahim and Faizal N. Enezi, Saudi Aramco; Enrico Ferreira, Baker Hughes
- 3:00 SPWLA-2024-0026 Surpassing the Challenges of Cement Evaluation on Pre-Salt Wells

Janio Cornelio, Kamaljeet Singh, and Emerson Rodrigues, SLB; Lorena Bicalho and Diego Brasil, Petrobras

- 3:00 SPWLA-2024-0027 Proactive Geosteering With New Multilayer Mapping Technology for Optimal Well Placement on the Edges of Mature Fields Agustin Paladines, Camilo Tellez, Israel Reyes, Alex Iza, Pablo Cisneros, Valeria Lucas, Paul Cornejo, Vinicio Mena, Andres Fonseca, Sergio Mata, Gustavo Núñez, José Rodas, Patricio Zamora, Egor Kovarskiy, Alexey Cheprasov, Igor Hernandez, Guillermo Cuadros, Manuel Garcia, and Alfonso Laguna, SLB
- 3:00 SPWLA-2024-0028 A Machine Learning Approach to Predict and Characterize Evaporites for H₂ Storage in Salt Cavities Perrine Baron, Emmanuel Caroli, Sabine Delahaye, and Alexandre Pichat, TotalEnergies
- 3:00 SPWLA-2024-0029 High-Resolution Peripheral Imaging Around a Borehole With a Source Independent TV-Constrained Full Waveform Inversion Approach Zhilong Fang and Hua Wang, School of Resources and Environment, University of Electronic Science and Technology of China
- 3:00 SPWLA-2024-0030 Evaluation of Genetic and Geometric Features Extracted Using Automatic Segmentation for the Characterization of Porosity and Permeability of Reservoir Facies From Tartaruga Verde Field, South of Campos Basin Matheus Augusto Alves Cuglieri, Paulo Henrique de Oliveira, Marcelo Ramalho Albuquerque, and Leonardo Alencar de Oliveira, Petrobras S.A.

3:00 SPWLA-2024-0031 Real-Time Fluid Monitoring and Classification Using Downhole Spectrometer Measurements Kai Hsu, Richard Jackson, Hua Chen, Evgeniya Deger, Yoko Morikami, and Ju

Kai Hsu, Richard Jackson, Hua Chen, Evgeniya Deger, Yoko Morikami, and Jules El-Khoury, SLB

- 3:00 SPWLA-2024-0032 Looking for Producible Fractures on Different Scales Fernando Gomes de Mello e Silva, Antonio Persio Silvestre, Alexandre Kolisnyk, and Vanessa Madrucci, Petrobras - Petróleo Brasileiro S.A.
- 3:00 SPWLA-2024-0033 The Cased Oil Saturation Determination Method Based on Gamma-Thermal Neutron Response Guofeng Yang, Wenzheng Peng, Hongfa Ye, Zhengyan Wang, Meng Chen, and Xiangjun Liu, School of Geoscience and Technology, Southwest Petroleum University
- 3:00 SPWLA-2024-0034 Maximizing Mud Logging Data Value: Sw and Porosity Prediction for the Cabeças Formation – Parnaíba Basin, Brazil Vitória Flores, Henrique Padoves, Márcia Nunes, Gustavo Pimentel, and Frederico S. de Miranda, ENEVA

Session 6 (Gavea B)

GENERAL: FORMATION TESTING - RESERVOIR DYNAMICS AND FLUID CHARACTERIZATION

Chairpersons: Sami Eyuboglu (Halliburton) and Dler Mirza (AkerBP) Sponsored by:

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- 3:40 SPWLA-2024-0035 Integrating Dual-Flowline Fluid Property Measurements for Guided Focusing and Cleanup Monitoring During Fluid Sampling Melton Hows and Thomas Pfeiffer, Shell Exploration and Production Co.; Richard Jackson, Kai Hsu, Hua Chen, Evgeniya Deger, and Jules El-Khoury, SLB
- 4:00 SPWLA-2024-0036 Disparate Fluid Distributions of Stacked Gas-Washed Reservoirs Are Successfully History-Matched via Forward Modeling of Fluid Mixing Processes

Tarek S. Mohamed, The University of Texas at Austin; Morten Kristensen, SLB; Carlos Torres-Verdín, The University of Texas at Austin; I. Yucel Akkutlu, Texas A&M University; Oliver C. Mullins, SLB

4:20 SPWLA-2024-0037 Asphaltene Characterization Using Downhole Fluid Mapping While Drilling – Fluid Characterization Case Study for Completion Optimization Yon Blanco SLB; Rolando di Primio and Øyvind Stirø, AkerBP; Julian J. Pop, Scotty Paul, and Velerian Sanjao Lopez, SLB

- 4:40 SPWLA-2024-0038 Combination of Borehole Image Logs and Downhole Fluid Analysis Logs to Assess Reservoir Connectivity Oliver C. Mullins, SLB; Bernd Ruehlicke, Zbynek Veselovsky, and Carsten Vahle, Eriksfiord; Peter Schlicht, Robert J. Laronga, and Soraya S. Betancourt, SLB; Brandon Thibodeaux and Bilal Hakim, Talos
- 5:00 SPWLA-2024-0039 An Automated Workflow to Optimize Parameters for Formation Pressure Measurements Utilizing Memoization Pontus Loviken, Yon Blanco, and Tianjun Hou, SLB

Session 7 (Gavea A)

SPORSE: MULTI-PHYSICS/MULTI-DISCIPLINARY CORE TO RESERVOIR MODELS

Chairpersons: Kristopher Farmer (Core Laboratories) and Eliany Teran (Equinor)



- 3:40 SPWLA-2024-0040 A Novel Multi-Physics Interpretation Method for Quantifying Mineral Using a Pulsed Neutron Element Logging Tool Ya Jin, Quanwen Zhang, Decheng Niu, Lu Yin, and Zhiyuan Liu, China Oilfield Services Limited; Yi Ge and Qiong Zhang, University of Electronic Science and Technology of China
- 4:00 SPWLA-2024-0041 Dynamic-To-Static Permeability Ratio Provides Valuable Insights of Reservoir Architecture and Heterogeneity in Complex Hydraulically Fractured Reservoirs

German Merletti, Siyavash Motealleh, Peter Armitage, Khalil Al Rashdi, Martin Wells, Salim Al Hajri, and Nigel Clark, BP

4:20 SPWLA-2024-0042 Applications of a New Multiphysics Inversion Technique: Optimized Petrophysical Evaluation of Advanced Dielectric and Spectroscopy Logs in Unconventional Reservoirs

Andrew C. Johnson, Laurent Mossé, Yevgeny Karpekin, Ulises D. Bustos, Violeta Lujan, and Akinlolu Williams, SLB

4:40 SPWLA-2024-0043 Best Practices for Porosity Estimation in Karstified Pre-Salt Carbonate Reservoirs

Candida Menezes de Jesus, Frederico Bastos Schuab, Lucas Abreu Blanes de Oliveira, and Rodrigo Dos Santos Maia Correa, Petrobras- Petróleo Brasileiro S.A.

- 5:00 SPWLA-2024-0044 Perched Water Observations in Deepwater Miocene Fields Using Well Logs, Core, and Production Data Alexander Kostin and Jorge Sanchez-Ramirez, Woodside Energy
- 5:30 End of 1st Day -Adjourn

Tuesday – May 21st Session 8 (Gavea B)

GENERAL: DATA ANALYTICS - GAINS AND LIMITATIONS - I

Chairpersons: Saad Omar (SLB) and Kjetil Westeng (AkerBP)

- 8:00 SPWLA-2024-0045 Novel Machine-Learning-Driven Framework for Rock Typing and Permeability Prediction Using Borehole and Spatial Data – A Case Study From a Supergiant Carbonate Reservoir in Abu Dhabi Gennady Makarychev, SLB; Nader Gerges, ADNOC; Alaa Maarouf, Lulwa Almarzooqi, Luisa Ana Barillas Cortez, Midhun Madhavan, and Hussein Mustapha, SLB; Chakib Kada Kloucha, ADNOC
- 8:20 SPWLA-2024-0046 An Automatic Approach for Core-To-Log Depth Matching in Pre-Salt Carbonate Reservoirs

Adna Grazielly Paz de Vasconcelos, Luciana Velasco Medani, Rodrigo Bittencourt de Aguiar, Giovanna da Fraga Carneiro, and Lin Liang, SLB

8:40 SPWLA-2024-0047 Describing the Porosity of Pre-Salt Carbonate Rocks Using Machine Learning

Gisella Roza Nunes, Gilberto Raitz Junior, Jeferson dos Santos, and Leonardo Borghi, Federal University of Rio de Janeiro

- 9:00 SPWLA-2024-0048 Inversion-Based Multiwell Petrophysical Interpretation of Well Logs and Core Data via Adaptive Rock Physics Models Joaquín Ambía, David González, and Carlos Torres-Verdín, The University of Texas at Austin
- 9:20 SPWLA-2024-0049 Enhanced AI-Driven Automatic Dip Picking in Horizontal Wells Through Deep Learning, Clustering, and Interpolation in Real Time Alexandre Perrier, Alexis He, Nadège Bize-Forest, and Daniel Quesada, SLB

Session 9 (Gavea A)

GENERAL: GEOSTEERING / UDAR WELL PLACEMENT FOR OPTIMAL COMPLETION

Chairpersons: Jennifer Market (SPWLA President) and Jun Zhang (Baker Hughes) Sponsored by:



8:00 SPWLA-2024-0050 Production Sustainability of a Challenging Heterogeneous, Mature Carbonate Reservoir: An Integrated Solution Comprising Near and Far-Field LWD Measurements

Amr M. Serry, Shafiq Ahmed, Owais Ameer, and Sharifa Yousif, Salim Kaouche, and Hawra Al Obeidli, ADNOC Offshore; Asim Mumtaz, Sanathoi Potshangbam, and Nada Al Sayed, and Baker Hughes

- 8:20 SPWLA-2024-0051 Optimizing Well Placement Using Real-Time Ultra-Deep Resistivity Look-Around Inversion – Deepwater GOM Case Study Franck Michel, David Lopez, and Do Dang Sa, Halliburton; Christopher Moyer, Amy Borgmeyer, Bobby Bodek, and Alejandra C. Maldonado, Occidental
- 8:40 SPWLA-2024-0052 The Integration of Shallow to Ultradeep LWD Data: The Key to Geosteering and Improved Reservoir Understanding Carlos Sarquez, Nigel Clegg, and Rosamary Ameneiro, Halliburton; Petter Vikhamar and Embla Galdal, ConocoPhillips
- 9:00 SPWLA-2024-0053 Use of Multilayer Mapping-While-Drilling Technology for Field Exploration Strategy Optimization While Increasing Production Oscar Navarro, Anthony Stuart, William Cage, Alan Santos, Juan Cárdenas, Daniel Lancheros, and Andrés Rocha, Hupecol; Egor Kovarskiy, Igor Hernandez, Guillermo Cuadros, Cristian Moncada, Alexey Cheprasov, and Eslendy Lara, SLB
- 9:20 SPWLA-2024-0054 Mapping Historical Water Flooding and Facilitating Production Strategy With the Use of New Reservoir Mapping-While-Drilling Systems: A Case Study From Offshore Norway

Yazil Abbas, Mauro Viandante, Emmanuel E. Uzuegbu, Ahmed El Sedeq, and Jean-Michel Denichou, SLB; Per Erik Wærum, Sven S. Gundersen, Silje A. Kommedal, Andrea T. Liverød, and Bjørn Matre, Respol Norge AS

9:40 Break (20 mins)

Session 10 (Gavea B) _ GENERAL: DATA ANALYTICS - GAINS AND LIMITATIONS - II Chairpersons: Peter Schlicht (SLB) and Harry Xie (Core Laboratories) Sponsored by:



10:00 SPWLA-2024-0055 Physics-Based Probabilistic Permeability Prediction in Thin-Layered Reservoirs: Transport Theory, Dielectric Dispersion Logging and Coreto-Log Bayesian Statistics

Marco Pirrone, Nicola Bona, and Maria Teresa Galli, Eni S.p.A.

10:20 SPWLA-2024-0056 Petrophysical Joint Inversion for the Estimation of Compositional and Storage Properties of Thinly Bedded Reservoirs: A Fully Statistical Approach

Joaquín Ambía, David González, and Carlos Torres-Verdín, The University of Texas at Austin

10:40 SPWLA-2024-0057 Weak Reflection Extraction in Borehole Acoustic Reflection Imaging Using an Unsupervised Machining Learning Method Qiang Wang, Hua Wang, and Zhilong Fang, University of Electronic Science and Technology of China; Danian Xu, Xiao Qi, and Yang Yu, China Oilfield Services

Limited

11:00 SPWLA-2024-0058 Assessment of Petrophysical Heterogeneity Based on Image Data

Pallavi Sahu and Zoya Heidari, The University of Texas at Austin

11:20 SPWLA-2024-0059 A Data-Driven Method for Formation Slowness Estimation Behind Casing

Xuekai Sun, Chunhao Yu, Jun Zhou, Yue Liu, Siyi Li, Xianping Liu, Hao Sun, and Ran Zhang, Acoustic Research Center, China National Logging Corporation (CNLC), CNPC; Jingqi Lin and Hao Chen, China National Logging Corporation (CNLC), CNPC

Session 11 (Gavea A)

GENERAL: GEOSTEERING / UDAR WELL PLACEMENT - CASE STUDIES AND LOOK AHEAD

Chairpersons: Nigel Clegg (Halliburton) and Zoya Heidari (University of Texas at Austin) Sponsored by:



10:00 SPWLA-2024-0060 Look-Ahead-While-Drilling Technology Assessment for Early Hazards Identification in Presalt Offshore Brazil

Antonio Mainieri Vieira da Cunha, Wilson Yoji Nakamura Junior, Geraldo Majela Sartori Brandão, Guilherme Augusto Amaral, João Paulo Teixeira da Fonseca, Fátima Andreia de Freitas Brasil, Randolpho Lobo de Freitas Junior, Willy Viana Bohn, Ralf Wilhelm Bohrer, and Almir Rogério Pedroso, Petrobras; Guillermo Marcelo Cuadros, Ligia de Matos,Soazig Leveque, Diogo Salim, Charles Silva, and Mario Galaguza, SLB

10:20 SPWLA-2024-0061 Improved Detection and Description of 3D Sandstone Injectites in the Grane Field, Central North Sea via 1D Stochastic Inversion of UDAR Measurements

Nazanin Jahani, NORCE Norwegian Research Centre AS, and Carlos Torres-Verdín, The University of Texas at Austin

10:40 SPWLA-2024-0062 Maximising Look Ahead Sensitivity to Presalt Reservoir in a Near Vertical Scenario in the Presence of Intra Salt Intercalations: A Case Study in Bacalhao Field, Offshore Brazil

Armando Vianna, Enrico Ferreira, Sergey Martakov, and Warren Fernades, Baker Hughes; Katharine Sandler Klein, Equinor

11:00 SPWLA-2024-0063 Revealing Subsurface Structures in Ultra-High Definition With UDAR (Ultradeep Azimuthal Resistivity) Measurements – A Case Study From Brazil

Enrico Ferreira, Armando Vianna, Gleb Dyatlov, and David Holbrough, Baker Hughes; Antônio Mainieri, Petrobras

- 11:20 SPWLA-2024-0064 Enhanced Reservoir Characterization and Horizontal Well Placement With the Use of High-Definition and Three-Dimensional Reservoir Mapping-While-Drilling Systems in Campos Basin, Offshore Brazil Antonio Mainieri Vieira da Cunha, Munir Pinto Koosah, João Antenor Prats Xavier, Caio Eduardo Barbosa Coutinho, Elisângela Cordeiro Pessoa, Eduardo Hilgenberg Mezzomo, Abel da Sila Hermida, Fábio Pimenta Bernardez, Paula de Freitas Santos, Hilário Mucelim Giro, Matheus de Almeida Garcia, Caio Jean Matto Grosso da Silva, Petrobras; Guillermo Marcelo Cuadros, Ligia de Matos, Mauro Viandante, and Charles Silva, SLB
- 11:40-1:10 LUNCH (Awards Presentation Luncheon)- (Carioca)

Session 12 (Gavea B)

GENERAL: IMAGING TECHNOLOGY AND APPLICATIONS - BEYOND DIPS

Chairpersons: Peter Barrett (Halliburton) and Christian Rambousek (Nimbuc Geoscience)

1:10 SPWLA-2024-0065 Assessing the Impact of Image Data on Enhancing Rock Typing and Formation Evaluation

Pallavi Sahu and Zoya Heidari, The University of Texas at Austin; Gabriel Feres Nassau, Plinio Cancio Rocha da Silva, and Willian Tevizan, Petrobras

1:30 SPWLA-2024-0066 Optimizing Petrophysical and Geological Evaluation on Tight Oil Reservoir in a Braided Delta Fault-Nose Structure, Pearl River Mouth Basin, South China

Lipeng He and Jian Li, CNOOC-CCLS Ltd., Bo Liu, Huanling Bian, Chenglong Wang, and Tuany Fatah, Baker Hughes

1:50 SPWLA-2024-0067 High-Definition Acoustic and Resistivity Imaging-While-Drilling Technologies: Experiences in the Brazilian Presalt Carbonate Reservoirs Guillermo Marcelo Cuadros, SLB/WCM; Ana Patricia Cavalcanti de Castro Laier, Antonio Persio Silvestre, Erica Kato Pacheco Ferraz, Pamella Paiva Fernandes, and Anabela Porto Rosa, Petrobras; Andre Esteves and Milena Rosa, SLB/D&I

2:10 SPWLA-2024-0068 Image Data: The Unexplored Potential for Reservoir Characterization, Brazilian Pre-Salt

Gilberto Raitz Junior, Théo Farhat, Jeferson Santos, and Carolina Ribeiro, Laboratory of Sedimentary Geology (Lagesed), Department of Geology, Institute of Geosciences, Federal University of Rio de Janeiro, Brazil

2:30 SPWLA-2024-0069 Integrated Application of Advanced Logging While Drilling for Understanding Altered Basement Rocks: A Case Study From the Norwegian North Sea

Sayyid Ahmad, Halliburton; Lars Riber, AkerBP and University of Oslo; Gianbattista Tosi, Halliburton; Ingrid Piene Gianotten, Ophelie Durand, and Sanaz Javid, AkerBP; Robert Gales, Srimantha Chakraborty, Sami Eyuboglu, and Karol Riofrio Rodriguez, Halliburton; Ole Johan Hornenes, AkerBP; Richard Michael Holland, Halliburton; Nils Andre Aarseth, AkerBP

Session 13 (Gavea A)

SPORSE: LATEST INNOVATIONS IN ULTRA-DEEP AZIMUTHAL RESISTIVITY FOR 3D APPLICATIONS

Chairpersons: Jean-Michel Denichou (SLB) and Paulo Netto (Petrobras) Sponsored by:

HALLIBURTON

1:10 SPWLA-2024-0070 Enhancing Local Anisotropy Characterization With Ultra-Deep Azimuthal Resistivity Measurements Hsu-Hsiang (Mark) Wu, Dagang Wu, Jin Ma, Ting Yan, Clint Lozinsky, and Micha

Hsu-Hsiang (Mark) Wu, Dagang Wu, Jin Ma, Ting Yan, Clint Lozinsky, and Michael Bittar, Halliburton

1:30 SPWLA-2024-0071 Fast Stochastic Inversion of Udar Measurements Using Adaptive Multi-Grid Simulated Annealing Guided By Model Parameter Error Estimation

Nazanin Jahani, NORCE Norwegian Research Centre AS, Wardana Saputra, and Carlos Torres-Verdín, The University of Texas at Austin, and Egil Romsås Fjeldberg, AkerBP

1:50 SPWLA-2024-0072 High-Definition-Mapping UDAR Inversion Provides Accurate Geobody Geometries in a Complex 3D Reservoir Karol Riofrio, Arthur Walmsley, and Nigel Clegg, Halliburton: Joanna Mouatt and

Karol Riofrio, Arthur Walmsley, and Nigel Clegg, Halliburton; Joanna Mouatt and Fanny Marcy, Aker BP

- 2:10 SPWLA-2024-0073 Energy and Spectrum of Transient Electromagnetic Responses for Deep-Reading Looking Ahead LWD Tools Pengfei Liang, Qingyun Di, Wenxuan Chen, Wenxiu Zhang, Ranming Liu, and Xinghan Li, and Institute of Geology and Geophysics, Chinese Academy of Sciences
- 2:30 SPWLA-2024-0074 Adaptive Multidimensional Inversion for Borehole Ultra-Deep Azimuthal Resistivity

Wardana Saputra, Joaquín Ambía, and Carlos Torres-Verdín, The University of Texas at Austin; Sofia Davydycheva and Vladimir Druskin, 3D EM Modeling&Inversion JIP; Jörn Zimmerling, Uppsala University

2:50 Break (10 mins)

Session 14 (Vidigal) <u>POSTER SESSION 2 (Session 3:00-3:35)</u>

Chairperson: Gerardo Cedillo (BP), Neal Cameron (Geolog), Javier Miranda (DeGoyler and MacNaughton), and Luis Quintero (Halliburton)

- 3:00 SPWLA-2024-0075 Formation Acoustic Properties Analysis Based on an Innovative Cement Evaluation Log Behind Multiple Casing Strings Erik Wielemaker, J. Adam Donald, and Kamaljeet Singh, SLB; Amr Serry Guifen Xi, and Alya Al Salati, ADNOC
- 3:00 SPWLA-2024-0076 Overcoming Cased Hole Logging Challenges to Assess Waterflood Conformance in Clair Ridge Segment 2B Alexandra Love, James Hoad, and Xiaogang Han, BP plc
- 3:00 SPWLA-2024-0077 Cascaded Machine Learning in NMR: Unveiling a Continuous Grain Size Distribution Approach for Tackling Sand Production Challenges Muhamad Saiful Hakimi Daud, SLB; Seyed Mehdi Tabatabai, PETRONAS; Fui Kent Wong, SLB

3:00 SPWLA-2024-0078 Real-Time LWD Sonic Processing Enabled by Data Driven Machine Learning

Lin Liang, Ting Lei, Yixin Wang, Matt Blyth, Michiko Hamada, and Naoki Sakiyama, SLB

3:00 SPWLA-2024-0079 Multi-Technique Characterization of Carbonate Lithotypes and Evaluation of the Impact of Fine Grains on Barra Velha Formation Reservoirs, Sepia Field, Santos Basin

Guilherme Oliveira Ramos dos Santos, National Observatory; Gabriel Sousa dos Santos Ribeiro, COPPE/UFRJ; Leonardo Ventura and Giovanni Chaves Stael, National Observatory

- 3:00 SPWLA-2024-0080 Research and Application of Fracability Evaluation Method for Tight Sandstone Reservoirs Based on Logging and Experimental Data Yuping Qian, China Oilfield Services Limited; Wenwen Wang, China United Coalbed Methane Co., Ltd.; Huizhuo Xie, China Oilfield Services Limited
- 3:00 SPWLA-2024-0081 Reflection Sonic Imaging Using Slim-Hole Pipe Conveyed Sonic Tools

Brian Hornby, Hornby Geophysical Services, LLC; Mark Bacciarelli, Rachel Ospina, and Said Assous, Weatherford International

3:00 SPWLA-2024-0082 A New Method For Formation Density Calculation Using A Through-Drill Bit Density Tool

Yang Wang, Qiong Zhang, and Qiang Li, University of Electronic Science and Technology of China

- 3:00 SPWLA-2024-0083 Molecular Dynamic Simulation of CO₂ Flooding Into Mineral Nanopores in the Presence of Residual Oil Isa Silveira de Araujo, Ibrahim Gomaa, and Zoya Heidari, The University of Texas at Austin
- 3:00 SPWLA-2024-0084 Fast and Automatic Extraction of Fracture Apparent Attitude Based on CT Images of Full-Diameter Cores Ying Zhou and Xin Nie, Yangtze University
- 3:00 SPWLA-2024-0085 A Method for Shortening Echo Spacing of Nuclear Magnetic Resonance Downhole Instruments Wei Liu, Wenxiu Zhang, and Wenxuan Chen, Institute of Geology and Geophysics, Chinese Academy of Sciences; Guangzhi Liao, China University of Petroleum-Beijing

30

3:00 SPWLA-2024-0086 An Image-Based Artificial Intelligence Approach for the Determination of Analog Petrophysical Rock Properties From Drill Cuttings Allen Britton and Katrina Cox, Core Laboratories; Shouxiang Mark Ma, Saudi Aramco

Session 15 (Gavea A)

GENERAL: NMR TECHNOLOGY AND APPLICATIONS - PORES AND FLUIDS

Chairpersons: Nate Bachman (SLB) and Jesus Salazar (Baker Hughes) Sponsored by:

Baker Hughes ≽

- 3:40 SPWLA-2024-0087 A Physics Informed Deep-Learning Architecture for Transforming NMR T₂ to MICP Pore Throats for Carbonate Rocks Wei Shao and Songhua Chen, Halliburton; Shouxiang Mark Ma, Gabor Hursan, and Abdullah Alakeely, Aramco
- 4:00 SPWLA-2024-0088 Comparison of PCA and Autoencoder Compression for Telemetry of Logging-While-Drilling NMR Measurements Wolfgang Weinzierl, Oliver Mohnke, Lucas Kirschbaum, Radu Coman, and Holger Thern, Baker Hughes
- 4:20 SPWLA-2024-0089 Characterizing Thin Bed Responses in Horizontal Wells Using LWD NMR Tools: Insights From a Water Tank Experiment Ahmed Allam, David Allen, and Zeyad Ramadan, SLB
- 4:40 SPWLA-2024-0090 Quantitative Evaluation for Fluid Components on 2D NMR Spectrum Using Image Boundary Tracking and Modified GMM Clustering Method

Jiawei Zhang, Guangzhi Liao, Lizhi Xiao, and Sihui Luo, China University of Petroleum, Beijing

5:00 SPWLA-2024-0091 Integrating Statistically Significant Laboratory Information in Variable T₂ Cutoff Logs for NMR Interpretation in Pre-Salt Bernardo Coutinho Camilo dos Santos, Willian Andrighetto Trevizan, Thais Fernandes de Mato, Edmir Ravazzi Franco Ramos, Leonardo Gonçalves, and Lucas Abreu Blanes de Oliveira, Petrobras – Petróleo Brasileiro S.A.

Session 16 (Gavea B)

SPORSE: LATEST INNOVATIONS IN ULTRA-DEEP AZIMUTHAL RESISTIVITY FOR

3D APPLICATIONS

Chairpersons: Susana Carrilero (Halliburton) and John Zhou (Maxwell Dynamics) Sponsored by:



- 3:40 SPWLA-2024-0092 High-Resolution 3D Reservoir Mapping and Geosteering Using Voxel-Based Inversion Processing of UDAR Measurements Saad Omar, Diogo Salim, Mikhail Zaslavsky, and Lin Liang, SLB
- 4:00 SPWLA-2024-0093 Dielectric Permittivity From LWD Electromagnetic Measurements – Methods Comparison and Results Validation Salah Al-Ofi and Jun Zhang, Baker Hughes; Shouxiang Mark Ma, Saudi Aramco
- 4:20 SPWLA-2024-0094 Exploring Propagation Resistivity Measurements With Two Receiver Pairs

Holger Thern and Jun Zhang, Baker Hughes

- 4:40 SPWLA-2024-0095 A New Short Spacing Transient Electromagnetic LWD Tool for Geosteering and Formation Evaluation Xiaozhuang Wang, Jie Gao, Shizhen Ke, Wei Su and Yanxin Zhou, China University of Petroleum-Beijing; Jun Zhu and Zhanshan Xiao, China National Logging Corporation
- 5:00 SPWLA-2024-0096 Predicting the Future With UDAR 3D Resistivity Modeling: A New Key to Unlock Multi-Dimensional Reservoir Steering Yazil Abbas, Mauro Viandante, Jianguo Liu, and Mikhail Zaslavsky, SLB; Per Erik Wærum, Sven Severin Gundersen, Øystein Spinnangr, and Wayne Abraham, Repsol Norge AS
- 5:20 End of 2nd Day -Adjourn

Wednesday – May 22nd Session 17 (Gavea A)

GENERAL: NEW TECHNOLOGIES / APPLICATIONS - I

Chairpersons: Santiago Drexler (Shell) and Amer Hanif (Baker Hughes) Sponsored by:

Baker Hughes ≽

8:00 SPWLA-2024-0097 Pushing the Envelope of Casing and Cement Inspection: Logging Two Casing Sizes Simultaneously and Setting a Cement Plug in a Single Run

Andy Hawthorn, Mats Ingebretson, and Nina Girneata, Baker Hughes; Laurent Delabroy, Aker BP; Tonje Winter, Former Aker BP; Roger Steinsiek and Ian Leslie, Baker Hughes

- 8:20 SPWLA-2024-0098 Core Scanner for Electrical Profiling of Full-Bore Cores at the Well Site With Advanced Pulse Electromagnetic Technology Dler Mirza and Kristofer Birkeland, Aker BP; Lars Øy, Roland Chemali, and Benjamin Barrouillet, WELL ID SA
- 8:40 SPWLA-2024-0099 Pseudo Borehole Images From Outcrop Photographs: Improving Geological Interpretations Sofia Alves Fornero, Candida Menezes de Jesus, Pamella Paiva Fernandes, and Willian Andrighetto Trevizan, Petrobras S.A.
- 9:00 SPWLA-2024-0100 A Case Study on Building A Structured Logging Database From Brazilian Terrestrial Basins For Enhanced Data Science Applications Rodrigo César Teixeira de Gouvêa and Cleyton de Carvalho Carneiro, University of São Paulo
- 9:20 SPWLA-2024-0101 A Novel Approach to Estimate TOC in Unconventional Reservoirs: The Case of the Pimenteiras Shale, Parnaíba Basin, Brazil Luis Miguel Rojas, Lilian S. Silveira, Frederico Miranda, and Jose Roberto Corrêa, ENEVA S.A.

Session 18 (Gavea B)

SPORSE: CASED HOLE PETROPHYSICS AND RESERVOIR SURVEILLANCE

Chairpersons: Gerardo Cedillo (BP) and Javier Miranda (DeGoyler and MacNaughton)

- 8:00 SPWLA-2024-0106 From Leak Path Detection to Quantitative Flow Profiling: The Exciting Journey of the Noise Giuseppe Galli and Marco Pirrone, Eni S.p.A.
- 8:20 SPWLA-2024-0103 Borehole Effect Correction in Pulsed Neutron-Neutron Logging for Formation Capture Cross-Section Determination Guofeng Yang, Wenzheng Peng, Hongfa Ye, Zhengyan Wang, Meng Chen, and Xiangjun Liu, School of Geoscience and Technology, Southwest Petroleum University

- 8:40 SPWLA-2024-0104 Unlocking Reservoir Potential: Strategic Role of Saturation Logs in Cased Hole for Waterflooding Optimization Patricio Zamora, Paul Cornejo, Luis Paredes, Sergio Mata, Ken Luzuriaga, Israel Reyes, Pablo Cisneros, Vinicio Mena, Jose Rodas, Benjamin Bonfanti, and Agustin Paladines, SLB
- 9:00 SPWLA-2024-0105 Novel Through-Tubing Casing Measurement With Azimuthal Sensitivity for Game-Changing Proactive Multi-Casing Corrosion Measurement Matthew Gavin, Andrew Smith, Marc Ramirez, Sushant Dutta, Jun Zhang, Adam Ostrowski, and Negah Ardjmandpour, Baker Hughes; Johan Kverneland, TotalEnergies EP Norge
- 9:20 SPWLA-2024-0102 Obtaining Remaining Oil Saturation For The Johan Sverdrup Field From a Variety of Logging Data Brice Fortier, Eirik Berg, Hege Christin Widerøe, and Margarete Kopal, Equinor; Tom Bradley and Tor Eiane, Baker Hughes
- 9:40 Break (20 mins)

Session 19 (Gavea A) GENERAL: NEW TECHNOLOGIES / APPLICATIONS - II

Chairpersons: Giuseppe Galli (ENI SpA) and Antonio Nascimento (Petrobras) Sponsored by:



10:00 SPWLA-2024-0107 New Experimental Method for Enhanced and Fast Saturation of Tight Rock Samples

Sabyasachi Dash and Zoya Heidari, The University of Texas at Austin

- 10:20 SPWLA-2024-0108 Enhancing Accuracy and Range of Sourceless Density Marie-Laure Mauborgne, Rubi Rodriguez, Françoise Allioli, Viktoriya Sergeyeva, Fabien Haranger, Alexis Pallain, Idris Babahayou, Erwan Tanguy, Vikas Jain, Vivek Agarwal, Marie van Steene, Karam Ali AlSadiq, SLB; Christian Stoller, Consultant
- 10:40 SPWLA-2024-0109 Fast Forward Modeling Method for Gamma LWD Using 1D
 Equivalent Integral in High Inclination or Horizontal Well
 Cairui Shao and Zhiqiang Ma, China University of Petroleum (East China); Miantao
 Yu, China Oilfield Services Limited

11:00 SPWLA-2024-0110 Simultaneous Correction of Shoulder-Bed and Anisotropy Effects on LWD Propagation Resistivity Logs in HAHZ Wells

Xizhou Yue, Guoyu Li, and Mingxue Ma, China Oilfield Services Ltd; Shanjun Li and John Zhou, Maxwell Dynamics, Inc.

11:20 SPWLA-2024-0111 Multi-Dimensional Inversion Unlocks "Trapped" Reservoir Reserve in Complex Geological Environment

Mauro Viandante, Janine Maalouf, and Valeria Vergani, SLB; James Davidson, Zakaria A. Hassan, Kelsey Lovell, Luke Magarinos, Andrew Murdoch, and Michael Rabinovich, BP

Session 20 (Gavea B)

GENERAL: CASED HOLE FORMATION EVALUATION/ WELL INTEGRITY DIAGNOSTICS AND REMEDIATION

Chairpersons: Nazanin Jahani (NORCE) and Brian Hornby (Hornby Geophysical)

10:00 SPWLA-2024-0112 The Road Through Microannuli: Advanced Ultrasonic Log Analysis and Mechanistic Modeling for Leak Rate Quantification Saida Machicote, Marco Pirrone, and Giuseppe Galli, Eni S.p.A.

10:20 SPWLA-2024-0113 Cement Bond and Corrosion Logging With Ultrasonic Phased-Array Transducer

Orland Guedes, Roel Van Os, Izabela Titton, Zheng Li, Hiroshi Hori, Patrick Girolami, Gilbert Tardivel, Gulnara Ishberdina, and Kamaljeet Singh, Mikhail Lemarenko, SLB, Schlumberger-Riboud Product Center

10:40 SPWLA-2024-0114 An Evaluation Cement Method Using Gamma-Gamma Density Imaging Logging in a Double Casing Well

Yiming Yu, Feng Zhang, Luyu Zhong, Zhenghua Hu, and Yuexiang Dai, School of Geoscience, China University of Petroleum (East China)

- 11:00 SPWLA-2024-0115 The Technology of Magnetic-Pulse Flaw Detection-Thickness Measurement of Multistring Wells by the Transient Method Gulnara Golovatskaya and Aleksandr Potapov, JSC Research and Production Enterprise VNIIGIS; Mingjun Xie and Aleksandr Shumilov, Perm State University
- 11:20 SPWLA-2024-0116 First-Ever Seven Pipe Corrosion Evaluation for Comprehensive Assessment of Pipe Integrity in Complex Well Completions Ahmed E. Fouda, Junwen Dai, Huiwen Sheng, Mahmoud Saada, Neil Ostermann, and Sushovon Roy, Halliburton

11:40-12:35 LUNCH (Leadership Luncheon -Invitation only)

Session 21 (Gavea A)

GENERAL: NUCLEAR TECHNOLOGY AND APPLICATIONS - MINERALOGY, FLUIDS AND TRUE POROSITY - I

Chairpersons: Chinwendu Mogbo (Asharami Energy) and Bruno Tosta (Petrobras)

12:40 SPWLA-2024-0117 A Novel Determining Borehole Fluid Density and Imaging Method Using X-ray Source

Luyu Zhong, Feng Zhang, Yiming Yu, Zhenhua Hu, and Yimula Abulahai, School of Geosciences, China University of Petroleum (East China)

1:00 SPWLA-2024-0118 Experimental Validation of a Sensitivity Function Based Sigma Simulator in a Cased-Hole Environment With Calibration Facility and Production Well Data

Varignier Geoffrey, Pïerre Chuilon, Emmanuel Caroli, and Benoît Guivarc'h, TotalEnergies; Heiko Reinhardt, ANTARES Datensysteme GmbH; Cédric Carasco, Bertrand Pérot, and Thomas Marchais, CEA; Johann Collot, University Grenoble Alpes, and Mai-Linh Doan, Université Grenoble-Alpes

- 1:20 SPWLA-2024-0119 The Neutron Porosity Logging Method Based on D-D Generator With Dual Pulse Mode in Sidetracking Well Xiaoyang Zhang, Xuelian Chen, Hui Zhang, and Feng Zhang, China University of Petroleum (East China); Linhua Guan, Jingli Dong, and Qian Chen, Sinopec Matrix Corporation
- 1:40 SPWLA-2024-0120 Geochemistry and Saturation Applications Utilizing a New Slim Pulsed-Neutron Technology

Weijun Guo, Fransiska Goenawan, Hernan Mora, Sushovon Roy, and John Savage, Halliburton

2:00 SPWLA-2024-0121 A New Method of Porosity Determination by D-T Neutron Generator and Dual CLYC Detector

Junting Fan, Feng Zhang, and Qixuan Liang, School of Geosciences, China University of Petroleum (East China); Yuyu Wu, PetroChina Southwest Oil & Gasfield Company

Session 22 (Gavea B)

GENERAL: NUCLEAR TECHNOLOGY AND APPLICATIONS - MINERALOGY, FLUIDS AND TRUE POROSITY - I

Chairpersons: Chelsea Newgord (ExxonMobil) and Luis Quintero (Halliburton)

12:40 SPWLA-2024-0122 A New Saturation Model for Tight Sandstones Based on Complex Resistivity Spectra

Wei Duan and Peiqiang Zhao, National Key Laboratory of Petroleum Resources and Engineering, China University of Petroleum and Beijing Key Laboratory of
Earth Prospecting and Information Technology, China University of Petroleum; Xiangxi Miao, Xi'nan Geosteering & Logging Company, Sinopec Matrix Corporation; Qiran Lv and Shizhen Ke, National Key Laboratory of Petroleum Resources and Engineering, China University of Petroleum and Beijing Key Laboratory of Earth Prospecting and Information Technology, China University of Petroleum; Wei Xu, Key Laboratory of Exploration Technology for Oil and Gas Resources of Ministry of Education, Yangtze University

- 1:00 SPWLA-2024-0123 Novel Method for Estimating Water Saturation in Gas Reservoirs Using Acoustic Log P-Wave and S-Wave Velocities Sheyore John Omovie, Goshey Energy Services LLC
- 1:20 SPWLA-2024-0124 Validating the Extended Thomas-Stieber Model Using A Variety of Imaging Modalities Lori A. Hathon, Michael T. Myers, and William Horvath, University of Houston
- 1:40 SPWLA-2024-0125 Thomas-Stieber Plots Viewed as the Source Data for Staged Effective Medium Models Michael T. Myers and Lori A. Hathon, University of Houston
- 2:00 SPWLA-2024-0126 Enhancing the Thomas-Stieber Model With Sonic Log Data for Improved Prediction of Clay Geometries and Total Porosity in Shaly Sands Tariq Saihood, Michael T. Myers, Lori A. Hathon, and Gabriel Unomah, University of Houston
- 2:20 Break (10 mins)

Session 23 (Vidigal)

POSTER SESSION 3 (2:30-3:05pm)

Chairpersons: Matt Blyth (SLB), Fransiska Goenawan (Halliburton), Amer Hanif (Baker Hughes), and Harry Xie (Core Laboratories)

2:30 SPWLA-2024-0127 Through-Tubing Casing Deformation Inspection Based on Data-Driven Koopman Modeling and Ensemble Kalman Filter Lijian Jiang, Linh Ho Manh, Qinshan Yang, Alexander Tarasov, Jinsong Zhao,

Aramco

2:30 SPWLA-2024-0128 NMR To Support Delimitation of Transition Zone of Pre-Salt Well

Moacyr Silva do Nascimento Neto, Leonardo Gonçalves, Jefferson Farrapo Portela, Augusto Pinheiro de Moraes Rego, and Frederico Bastos Schuab, Petrobras

2:30 SPWLA-2024-0129 Practical Model for Estimating Reservoir Crude Oil - Water Interfacial Tension

Mohammed Fadhel Al-Hamad and Sharath Chandra Mahavadi, SLB; Shouxiang Mark Ma, Saudi Aramco; Wael Abdallah, SLB

2:30 SPWLA-2024-0130 Methods And Application On Automatic Quality Control For Borehole Acoustic Logging Data

Gengxiao Yang, Hua Wang, Wanying Li, and Yinze Zhou, University of Electronic Science and Technology of China; Meng Wang and Zhijie Liu, China Oilfield Services Limited

- 2:30 SPWLA-2024-0131 Automated Identification of LRLC Reservoirs Using Machine Learning in South Sumatra Basin, Indonesia Aziz Permana, Yan Gustian, Jerry D. Mamesah, Pambudi Suseno, Giyatno, and Djudjuwanto, Pertamina Hulu Rokan; Diah A. Rahmalia, Sudarmaji, and Sarju Winardi, Universitas Gadjah Mada
- 2:30 SPWLA-2024-0132 Use of A Priori Information to Improve Automatic Electrofacies Classification: A Case Study in Brazilian Pre-Salt Carbonates Eduardo Barreto Oliveira, Petróleo Brasileiro S.A.
- 2:30 SPWLA-2024-0133 A Stabilized Real-Time Slowness Estimation Method for Compressional Waves by Using Kalman Filtering Hao Sun, Chunhao Yu, Xuekai Sun, Liming Jiang, Xianping Liu, Siyi Li, Xiao Zou, Yongchao Zhang, and Song Linghu, Acoustic Research Center, China National Logging Corporation
- 2:30 SPWLA-2024-0134 Data-Driven Petrophysics: An Automated Approach to Parameter Optimization in Well Log Interpretation Kjetil Westeng, Aker BP; Yann Van Crombrugge, Inmeta; Christian Nilsen Lehre, Sopra Steria; Peder Aursand and Tanya Kontsedal, Aker BP
- 2:30 SPWLA-2024-0135 Synergies Between Laboratory and Digital Rock For Improvement of Rock Models Rodrigo Surmas and Marcelo Ramalho Albuquerque, Petrobras Research and Development Center
- 2:30 SPWLA-2024-0136 A Job Planner Software for Oil-Based Mud Resistivity Imagers Ahmed E. Fouda, Baris Guner, and Peter Barrett, Halliburton
- 2:30 SPWLA-2024-0137 Estimation of Permeability Through Electrical Resistivity Response Determination in Carbonate Rocks From the Sergipe Sub-Basin Maria Rosilda Lopes de Carvalho, Marcus Vinícius Sousa Corrêa, Rimary Valera

Sifontes, Fernando Sergio de Moraes, Victor Hugo Santos, and Carlos Alberto Dias, Reservoir Inference Group – GIR/CCT/LENEP/UENF, National Institute of Petroleum Geophysics Science and Technology - INCT-GP

Session 24 (Gavea B)

GENERAL: NUCLEAR TECHNOLOGY AND APPLICATIONS - MINERALOGY, FLUIDS AND TRUE POROSITY - II

Chairpersons: Tom Bradley (Baker Hughes) and Pingjun Guo (ExxonMobil) Sponsored by:



 3:10 SPWLA-2024-0140 Geochemical Logging to Anticipate CO₂ Reactions: New Reactivity Estimates and CO₂ Storage Simulations
 Paul R. Craddock, Jeffrey Miles, and Sangcheol Yoon, SLB-Doll Research Center; Soham Sheth, SLB Abingdon Technology Center; and Laurent Mosse, SLB

Reservoir Performance

- 3:30 SPWLA-2024-0139 A Novel Method for Obtaining Formation Water Salinity Utilizing Elemental Spectroscopy Logging Jilin Fan, China National Logging Corporation; Feng Zhang, China University of Petroleum (East China); Wenhui Chen, and Aizhong Yue, China National Logging Corporation
- 3:50 SPWLA-2024-0138 Description and Benefits of Drilling Horizontal Exploration and Delineation Wells, Supported by Deployment of New Sensors and Digital Technologies

Martine Wenang, Sigurd Nyboe, Motaz Zeidan, Jean-Michel Denichou, and Mathias Horstmann, SLB; Artur Kotwicki, Srdjan Popovic, Aasmund Olav Lovestad, and Torstein Skorve, Aker BP

4:10 SPWLA-2024-0141 Enhancing Lithological Evaluation in Complex Triassic Reservoirs: A Comparative Analysis of LWD Spectroscopy and Standard Cuttings Examination

Rubi Rodriguez and Mathias Horstmann, SLB; Yngve Bolstad Johansen and Egil Romsås Fjeldberg, Aker BP; Francoise Allioli, Karim Bondabou, Andrea Di Daniel, Vikas Jain, and Vivek Agarwal, SLB

Session 25 (Gavea A)

GENERAL: INTEGRATED OPEN HOLE FORMATION EVALUATION - II

Chairpersons: Mark Bacciarelli (Weatherford) and Priscilla Reuters (Equinor)

3:10 SPWLA-2024-0142 High-Angle Formation Evaluation in Layered Formations Using Dual Arrival Sonic, Borehole Image, and Geosteering Electromagnetics Measurements

Nicholas Bennett and J. Adam Donald, SLB; Olusegun Akinyose and Shouxiang Mark Ma, Saudi Aramco; Mustafa A. Mubarak, Sherif Ghadiry, Hiroaki Yamamoto, and Wael Abdallah, SLB

- 3:30 SPWLA-2024-0143 Wireline Cable Dynamics and Wellbore Diagnostics in the Deepwater Logging Environment Mike Hanson, Lee Hyson, Hamish Munro, and Guy Wheater, Gaia Earth Group
- 3:50 SPWLA-2024-0144 Drilling Mud Filtrate Invasion Modeling for Residual Oil Saturation Estimation Filipe Ramos de Albuquerque, Gabriel Luiz Pérez Vieira, and João Paulo Teixeira da Fonseca, Petrobras S.A.
- 4:10 SPWLA-2024-0145 Estimation of Permeability Combining NMR Derived Viscosity and Downhole Fluid Mobility: A Case Study From Offshore Mexico Nicole Stadt, Wintershall Dea; Mohammad Azeem Chohan, Amer Hanif, Rex Sy, Steve Smith, Alisa Kukharchuk, and Maurizio Briones, Baker Hughes
- 4:30 Closing Remarks
- 5:00 End of the 65th Annual Symposium

WORKSHOP 2: Optimized Reservoir Performance: UDAR-Well Placement and High Angle /Horizontal Well Petrophysics

Date: Saturday, May 18, 2024 Time: 8:00 am – 4:30 pm Room: Copacabana Instructors: Nigel Clegg (Halliburton)

Description: A review of the principles, benefits, and latest innovations in Deep and Ultra-Deep Azimuthal Resistivity technologies with case studies focused on well placement for optimal reservoir performance. Although UDAR helps us place wells, we also need to utilize near well data to understand the reservoir details for completion optimization and reservoir performance.

WORKSHOP 3: Digital rock Applied to Formation Evaluation – upscaling insights from pore to well log scale

Date: Saturday, May 18, 2024 Time: 8:00 am – 4:30 pm Room: Leme Instructors: João Paulo Nunes (Petrobras), Rodrigo Surmas (Petrobras)

Description: The workshop will present techniques for simulating petrophysical properties - such as porosity, permeability, capillary pressure, relative permeability, and geomechanics - at the pore scale through digital rock and will show upscale examples for application in conjunction with well logs.

WORKSHOP 4: New Advances in NMR Techniques and Applications

Date: Saturday, May 18, 2024 **Time:** 8:00 am – 4:30 pm **Room:** Urca

Instructors: Nate Bachman (SLB), Kris Farmer (Core Labs), Jesus P Salazar (BakerHughes), Willian Trevizan (Petrobras)

Description: For this 2024 nuclear magnetic resonance (NMR) educational workshop we will get "back to basics" with three sub-topics: Core NMR, formation evaluation NMR (both wireline and LWD), and Core to Log integration. There will also be a brief introduction to NMR, so there is no prerequisite for this course. However, attendees will benefit from already having some basic familiarity with NMR.

WORKSHOPS

WORKSHOP 5: Towards the effective use of borehole acoustics; Understanding, validating and utilizing sonic measurements

Date: Sunday, May 19, 2024 Time: 8:00 am – 4:30 pm Room: Copacabana Instructors: Brian Hornby (Hornby Geophysical Services, LLS), Matt Blyth (SLB), Tiago de Bittencourt Rossi (Petrobras)

Description: This course aims to provide a grounding in the principles of borehole acoustic measurements in both simple and more complex conditions, along with quality control techniques and tools to ensure reliable data is obtained, and case studies showing how the results can be used for a variety of applications. This course will cover both wireline and LWD conveyances and explore the different acquisitions, capabilities, and applications of each and the case studies presented will cover both Brazil and international examples. Additionally, attendees would also be encouraged to bring their own case studies and examples for group analysis and discussion.

WORKSHOP 6: Data Analytics – Understanding the Tools – Limitations and Opportunities

Date: Sunday, May 19, 2024 **Time:** 8:00 am – 4:30 pm **Room:** Urca

Instructors: Kjetil Westeng (AkerBp), Lalitha Venkataramanan (slb), Others to be confirmed.

Description: The Petrophysical Machine Learning Workshop holds significance as it equips professionals with essential skills to harness the power of machine learning in petrophysical analysis. By addressing both the capabilities and constraints of these tools, the workshop fosters a comprehensive understanding, empowering participants to leverage data analytics for enhanced decision-making in various petrophysical challenges.

WORKSHOPS

WORKSHOP 7: Energy Transition Petrophysics – What is new, What is the Same

Date: Sunday, May 19, 2024
Time: 8:00 am – 4:30 pm
Room: Leblon
Instructors: Adam Haecker (Milestone Geoscience), Sami Eyuboglu (Halliburton)
Description: Large investments are being made in the energy transition, from the energy generation side (geothermal) to energy storage (hydrogen) and sequestration (carbon dioxide). In each case there is subsurface data required to reduce uncertainty to build a viable project. This workshop will focus on components that are specific to CO2 projects but also relate to storage projects – reservoir evaluation for storage capacity, injectivity and containment, testing programs and monitoring. One section will discuss the additional challenges for high temp geothermal projects.

TRIP 1:

Pre-salt reservoir analogues: lagoon and subaerial carbonate deposits analysis and petrophysical quality impacts to Alagoas Age carbonate deposits – Campos and Santos Basin

Date: Saturday, May 18, 2024
Time: 7:30 am – 6:30 am
Depart Location: Bus meeting area – Hotel Lobby
Location: Itaboraí e Araruama, Rio de Janeiro, Brazil
Included: Transportation, picnic/lunch, field guide. Pick-up and return from Sheraton Grand Hotel
Sponsor: Petrobras

FIELD TRIP LEADERS:

Candida Menezes, petrophysicist; Ednilson Freire, reservoir geologist advisor; Humberto Calfa, exploration geologist; Julia Guerrero, reservoir geologist; Marcelle Erthal, sedimentologist R&D; Paulo Moretti, sedimentologist advisor; Willy Bohn, petrophysicist.

DISCIPLINE:

Sedimentology, Stratigraphy, Petrophysics

MAIN GOALS:

The one-day field trip aims to provide a better understanding of carbonate sedimentation produced by various biotic or abiotic agents, through the study of an ancient travertine deposits and a recent lagoon in the stunning Lakes Region of Rio de Janeiro State. Furthermore, a discussion on the analogy between the observed sedimentary deposits and the main carbonate Pre-salt reservoirs of the Barra Velha Formation (Alagoas age) will be promoted during the field trip. The approach will comprise sedimentological, stratigraphic and petrophysical aspects.



THE FIELD TRIP:

The discovery of large oil accumulations in the Pre-Salt of both Campos and Santos Basins raised the interest in the understanding of lacustrine carbonate sedimentation. The oil production from the presalt lacustrine carbonate reservoirs (Alagoas age) currently corresponds to seventy-eight percent of total Brazilian production. This proposed field trip will allow the analysis of sedimentological (generation) and stratigraphic (preservation) aspects to the main carbonate reservoirs observed in the Pre-Salt. In the Araruama region, located north of Rio de Janeiro city, recent organic and chemical sedimentary structures (stromatolites and microbial mats) will be observed and typical carbonate reworking structures. This observation will allow discussions about the base level



controls on the formation and preservation of these structures, as well as the physical, chemical and climatic controls for formation and areal distribution. In the Itaboraí region, preserved ancient travertine and tufa deposits will be analyzed, where it will be possible the facies study, geometries and lateral variations of these deposits, also present in the Pre-Salt reservoirs in the East Brazilian Margin. Finally, a conclusion will be made with discussions about the petrophysical and geochemical characteristics from the point of view of the analyzes carried out along the outcrops visited and of the aspects observed in the reservoirs found in the Pre-Salt - Alagoas Age.

TRIP ITINERARY:

From	Time	То	Distance	Time
Sheraton Grand Hotel	7am	P1 - Itaboraí Park	73 km	9am
P1 - Itaboraí Park	10:30am	Lunch - Araruama Lagoon	98 km	12:30pm
Lunch - Araruama Lagoon	1:30pm	P2 – Vermelha Lagoon	14 km	2pm
P2 – Vermelha Lagoon	4pm	Sheraton Grand Hotel	135 km	6:30pm



RECOMMENDATIONS:

It is recommended to wear a hat or cap, light clothing, sunscreen, nautic aqua shoes (neoprene), extra slippers.

THE FIELD TRIP LEADERS:

The field trip leaders are composed by specialist and advisor geologists from Petrobras that has extensive experience in sedimentology, stratigraphy, reservoir geology and petrophysics of carbonate rocks and Pre-Salt reservoirs. The group has worked with rock samples analysis, petrography, log interpretation, sedimentological e diagenetic modeling, stratigraphic correlation, and field activities.

TRIP 2:

Core Workshop - Exploring Pre-Salt Carbonate Reservoirs: A Comprehensive Tour of Petrographic, Geochemical, and Petrophysical Insights

Date: Sunday, May 19th, 2024
Time: 8 am – 2:30 pm
Depart Location: Bus meeting area – Hotel Lobby
Location: Petrobras Research Center (CENPES), University City, Rio de Janeiro
Includes: Transportation, brunch, pick-up and return from Sheraton Grand Hotel

Join us on a comprehensive field trip during the upcoming SPWLA meeting in 2024, as we delve into the intricate world of Pre-Salt carbonate reservoirs. Our workshop, titled "Exploring Pre-Salt Carbonate Reservoirs: A Comprehensive Tour of Petrographic, Geochemical, and Petrophysical Insights", is scheduled for Sunday, May 19, 2024, from 8:00 am to 2:30 pm at the Leopoldo Américo Miguez de Mello Research, Development, and Innovation Center (CENPES, PETROBRAS) in Rio de Janeiro, RJ.

Goals: This workshop aims to provide participants with a deep understanding of Pre-Salt carbonate reservoirs, focusing on geological, petrographic, geochemical, and petrophysical aspects. The course will include an evaluation of cores, thin sections, geochemical analyses, and digital rocks from the Barra Velha and Itapema formations in the Santos Basin.

Key Topics to be Covered:

- 1. Conceptual geological aspects of Pre-Salt reservoirs, including depositional environment, facies, diagenetic processes, and sedimentological/ stratigraphic characteristics.
- 2. Challenges in petrophysical assessment, encompassing data acquisition, laboratory measurements, and petrophysical calculations.

- 3. Critical reservoir properties of Pre-Salt carbonates.
- 4. State-of-the-art laboratory techniques for core rock characterization.

Basis for the Course:

Our course is grounded in the ongoing exploration of the Pre-Salt across diverse areas in the Campos and Santos basins. Drawing from a spectrum of research papers, we delve into the intricate understanding of lacustrine Pre-Salt carbonate reservoirs. on analyses and studies focusing in petrography and petrophysics. The selected papers, representative of a broader pool of relevant literature, collectively unravel the depositional, diagenetic, and hydrothermal influences shaping porosity and permeability distribution.

Specifically, these studies explore the complexities of petrophysical assessments, laboratory measurements, and calculations essential for understanding Pre-Salt



carbonate reservoirs. By synthesizing insights from diverse sources, our course aims to offer a nuanced exploration of petrography and petrophysics, fostering a profound comprehension of reservoir properties. Engage with experts, explore innovative research, and gain hands-on experience in the laboratory, enhancing your ability to navigate the intricate details of these challenging reservoirs.

SOCIETY FUNCTIONS

STUDENT PAPER COMPETITION

Date: Sunday, May 19 Time: 8:00 am – 5:00 pm Room: Leme

This event will allow students competing to engage with colleagues from other schools and industry professionals. Graduate and undergraduate students will share their work and research for the opportunity of being awarded "best paper presentation". The competition will be held in three groups: Bachelor, MSc and PhD.

SPWLA ANNUAL BUSINESS MEETING AND LUNCH

Date: Monday, May 20 Time: 11:40 am – 1:10 pm Room: Carioca

The Annual Awards luncheon is open to all symposium delegates, their spouses and guest. During the lunch, individuals will be honoured and rewarded for their outstanding achievements and contributions to the Society and the industry.

SPWLA AWARDS PRESENTATION LUNCH

Date: Tuesday, May 21 Time: 11:40 am – 1:10 pm Room: Carioca

The SPWLA Annual Business Meeting is a lunch meeting open to all delegate attendees. During this lunch the 2023-2024 President and Board Members will share the accomplishments made during their tenure. Followed by the introduction and welcoming of the 2024-2025 President and Board Members.

SPWLA LEADERSHIP LUNCH

Date: Wednesday, May 22 Time: 11:40 am – 12:35 pm Room: Carioca Fee: By Invitation Only All current SPWLA Chapter Presidents (outgoing and incoming), SPWLA Parent, Past and Present Presidents, SPWLA Parent Regional Directors and SIG coordinators are invited to join this luncheon.

SPWLA NMR SIG CONFERENCE (POST SYMPOSIUM)

Date: Thursday, May 23

The SPWLA NMR SIG is pleased to invite you to participate in the SPWLA 2024 NMR SIG Conference, which will take place on May 23, 2024, in Rio de Janeiro, Brazil at the Baker Hughes Rio Energy Technology Innovation Center (RETIC). This conference offers a unique platform for experts, professionals, and researchers to share their insights, experiences, and innovations in the field of NMR petrophysics.

SOCIAL EVENTS AND FITNESS WORKOUT

EVENING RECEPTIONS

You are invited to spend your evenings while at SPWLA 2024 at receptions proudly hosted by our sponsors. We thank our loyal sponsors for their generous contributions and hospitality during our program.

ICEREAKER RECEPTION Hosted by

HALLIBURTON

Date: Sunday, May 19 Fee: Complimentary with registration Join your colleagues at the Halliburton Ice Breaker event on Sunday evening.

MONDAY EVENING SOCIAL Hosted by Date: Monday, May 20 Fee: Complimentary with registration

TUESDAY EVENING SOCIAL Hosted by

Date: Tuesday, May 21 Fee: Complimentary with registration. Join your colleagues at the SLB Tuesday Evening Social. Make plans to attend.

BEACH ACTIVITY - WORKOUT!!

Fee: Complimentary with registration

A new attraction sponsored by Geoactive and PRIO. Join us for a sunrise functional workout on May 21st at 6 AM, right on the beach in front of the Sheraton! The first 20 participants to sign up at the registration desk will receive free T-shirt. Don't miss out!

Please note that the event is subject to favorable weather conditions and may be subject to change.







Christ the Redeemer and Sugar Loaf Mountain

Date: Monday, May 20, 2024 Time: 10:00 am – 5:00 pm Depart Location: Bus meeting area – Hotel Lobby Places:

- Christ the Redeemer (by train*)
- Sugar Loaf Mountain (fast pass ticket*)

Includes transportation (Meals not included)

Christ the Redeemer is one of the Seven Wonders of the World, is a unique and unforgettable experience. Located at the top of Corcovado Hill in the Tijuca National Park, this iconic monument is a tourist attraction that draws millions of visitors annually.

The Sugarloaf Mountain is a magical and unforgettable experience. The cable car provides a gradual ascent, revealing breathtaking views of Guanabara Bay, famous beaches, and the Christ the Redeemer statue. * The group do not face normal queue for both attractions





SPOUSE/PARTNER PROGRAM

National Park, Stadium and Museum

Date: Tuesday, May 21, 2024 Time: 9:00 am – 5:00 pm Depart Location: Bus meeting area – Hotel Lobby Places:

- Tijuca Forest (National Park)
- Maracanã Stadium (Internal visit)
- Museum of Tomorrow (Internal visit)

Includes transportation (Meals not included)

The Tijuca National Park (urban forest) is all that's left of the Atlantic rainforest that once surrounded Rio de Janeiro. This 39-sq-km tropical-jungle preserve is an exuberant green, with beautiful trees, creeks and waterfalls, animals of different species.

Taking the Maracanã tour provides a fascinating and immersive experience at the legendary football stadium in Rio de Janeiro. Guided by experts, visitors gain access to exclusive areas such as locker rooms and the press room. The tour also includes historical insights and interesting facts about the stadium, along with the opportunity to explore a dedicated football museum. Interactive experiences and the chance to walk on the pitch add a special touch. Visitors can purchase souvenirs at the stadium's shop.









The Museum of Tomorrow provides an innovative and technological experience, combining modern architecture with interactive exhibits. Addressing themes such as sustainability and technology, it encourages reflection on human impact on the future. With multimedia installations and active visitor participation, it stands out for fostering critical thinking about building a sustainable future.

SPOUSE/PARTNER PROGRAM

Botanical Garden, Lage Park and Historical Tour

Date: Wednesday, May 22, 2024 **Time:** 9:00 am – 5:00 pm **Places:**

- Botanical Garden
- Lage Park
- Historical Tour (Colombo Confectionery/ National Library/ São Bento Monastery/ Municipal Theater (external)/ CCBB / Praça XV/ Teles Arch/ Selarón Steps)

Includes transportation (Meals not included)

The Botanic Garden houses a vast collection of tropical and exotic plants, some of which are endangered. Amidst a rich botanical diversity, it is a tranquil refuge, perfect for nature and history enthusiasts.

Beautiful Lage Park offers a unique experience that combines nature, architecture, and culture. The historic palace, surrounded by lush gardens, stands out in the backdrop of the Atlantic Forest scenery.

The Historic Center of Rio de Janeiro is an area rich in history and culture. It houses iconic monuments such as the Imperial Palace and Confeitaria Colombo, as well as historic churches like the São Bento Monastery. The cobblestone streets and



colonial architecture offer a journey back in time. Praça XV and the National Library are also prominent landmarks, connecting visitors to Brazil's imperial past. While exploring the center, visitors immerse themselves in centuries of history that have contributed to the formation of the country.

ACCOMMODATION IN RIO



Sheraton Grand Rio Hotel & Resort Av. Niemeyer, 121 - Leblon, Rio de Janeiro - RJ, 22450-220

For reservations:

Direct link to the Sheraton website: https://www.marriott.com/en-us/hotels/riosi-sheraton-grand-rio-hotel-and-resort/overview/

GROUND TRANSPORTATION FROM Rio de Janeiro-São Paulo air shuttle.

Mobility in Rio de Janeiro is easy, especially in the regions indicated for the symposium and tourist attractions. There are connected public transport with ample coverage (sub-way, bus, train, and LRT) and individual transport options such as taxis and app services (e.g., Uber).

GOLD MEDAL FOR TECHNICAL ACHIEVEMENT



Dr. Michael Bittar's journey in our industry began in 1990 when he joined Sperry Sun, now a part of Halliburton, as an EM scientist. Throughout his career, he has held various technical and leadership roles, including Halliburton Technology Fellow and Senior Director of Formation Evaluation.

Over his 34-year tenure with Halliburton, Dr. Bittar led the transformation of LWD resistivity technology from a single spacing, correlation-only measurement to a multi-spacing wireline quality measurement. Recognizing the significance of geosteering early on, he introduced the concept of tilted antennas for LWD resistivity tools, earning numerous patents. Today, this technology is widely adopted across the industry and plays a pivotal role in the development and evaluation of complex reservoirs.

Currently, Dr. Bittar serves as the Senior Director of Technology for Sperry Drilling, leading a dynamic team responsible for the development of drilling and LWD formation evaluation technologies. Under his guidance, his team has introduced key LWD innovations, including deep reading resistivity, ultra-deep resistivity, look-ahead-at-the-bit resistivity, and a new logging-while-drilling platform delivering high-definition measurements closer to the bit, to provide excellent subsurface insight.

Dr. Bittar received his BS, MS, and PhD degrees in electrical engineering from the University of Houston and has been awarded 145 US patents and has authored 75 publications. He is the recipient of the 2006 SPWLA Technical Achievement Award, the 2009 Halliburton Outstanding Commercialized Invention of the Year Award, the 2013 Halliburton Chairman Award for Technology, and the 2017 Halliburton Disruptive Technology of the Year Award. Dr. Bittar is a long-term member of SPWLA and SPE.

MEDAL OF HONOR FOR CAREER SERVICE



Katerina Yared, P.G., PMP, CDI.D, is a leader in the energy science and sustainability sectors, merging extensive geoscience expertise with a steadfast commitment to sustainable energy. As a project manager for Projeo Corporation and owner of Orka Switch Solutions LLC, she leads the charge in driving innovation in environmentally sustainable energy solutions, establishing herself as an essential "energy translator" in the industry. Her diverse career in the energy sector includes roles ranging

from field and applications engineer to geoscience manager at Baker Hughes, geoscientist at NEOS GeoSolutions, and petrophysicist at Apache Corporation, QEP Resources, and SM Energy. Katerina's significant impact extends to consulting for new energy ventures, where she has been pivotal in guiding the industry toward a more sustainable future.

Her robust academic background includes Master of Science degrees in Sustainable Management from the University of Wisconsin, Green Bay, and in Geology from RWTH Aachen University, Germany.

In addition to her professional contributions, Katerina's leadership extends to key roles within the industry. She is the 63rd president of the Society of Petrophysicists and Well Log Analysts (SPWLA), co-chair of the Women's Network of the American Association of Petroleum Geologists (AAPGWN), and a director at-large for the Energy Leadership Institute. Furthermore, she holds lifetime memberships in the Society of Petroleum Engineers (SPE) and the American Rock Mechanics Association (ARMA). Outside of her professional endeavors, she serves as co-CEO of her family in Colorado, raising three boys with her husband. It is her belief that the power of early education in belief systems and social awareness is crucial, aiming to foster a more inclusive and successful community. This perspective underpins Katerina Yared's blend of career success and personal dedication to environmental sustainability and social responsibility, showcasing her as a leader with a visionary approach to promoting sustainable and inclusive energy solutions.

DISTINGUISHED SERVICE AWARDS



Fransiska Goenawan is a Geoscientist with Halliburton Geoscientist & Production Center of Excellence, based in Houston. Her current role focusses on cased hole formation evaluation, reservoir surveillance, and well integrity assessment. Her responsibility includes job planning, processing, interpretation, and integration analysis. She received her master's degree in chemical Engineer from Bandung Institute of Technology, Indonesia. She is an active member of Society Petrophysics

and Well Log Analysis (SPWLA) and Society Petroleum Engineer (SPE). She served as a SPWLA VP of Northside Houston from 2018-2020 and SPWLA International VP of Education from 2020-2022.



Geoffrey Page studied physics at the Royal College of Science in London. Beginning his career as a Dresser Atlas wireline engineer in France in 1980 where he logged some wells in Pechelbronn – the home of logging! In 1988 he was transferred to Aberdeen as the North Sea Geoscience manager, moved into Petrophysics with a few years subcontracted into a major Oil Company as an asset Petrophysicist, and is now Region/Global Petrophysics Advisor for Baker Hughes. He is a former President of the

Aberdeen chapter of SPWLA (AFES). He has written and presented many papers, and been a contributor on many more, helped organise global conferences including SPWLA 2008 in Edinburgh and London 2018, and presented at many local meetings including AFES, LPS, DPS, NFES, SAID and Angola.

In 1988 Aberdeen University asked if they could visit the operational wireline base to view the logging equipment as part of the, then new, Integrated Petroleum Geoscience (IPG) Msc course. After a few years this expanded to teaching an introductory Petrophysics course that has now been given to over 700 IPG students, and is part of the Msc qualification. More recently this has also been extended to the Geophysics Msc, and a new Sustainable Energy Geoscience Msc. This and other logging technology courses, have also been presented to another 800+ industry professionals. For many of them this was this first time they had encountered "Petrophysics" and were inspired to now be seasoned Petrophysicists in their own right.



Nadege Bize-Forest serves as the Geology Workflow Manager and Advisor for SLB, presently located at the Technology and Engineering Center SRPC in France. Holding a Ph.D. in Geology with a specialization in Carbonates, she started her journey with SLB in 2006, providing operational support in Saudi Arabia and Romania. Following this, she led a multi-physics research project for 9 years, focusing on pre-salt carbonate reservoir characterization in Brazil.

Relocating to France in 2019, Nadege is responsible of validating the processing and measurements of all new imager tools, while also driving the development of innovative geological and digital solutions. Nadege has authored or co-authored over 30 papers and holds more than 10 patents.

Additionally, Nadege serves as the Geology Discipline Career Manager for SLB globally, overseeing the career progression and skills enhancement of all geologists within the organization.

Passionate about knowledge-sharing Nadege has always been enthusiastic in supporting the SPWLA organization. Locally, she has served as the technical secretary for the Brazil and France chapters, coordinating technical webinars, workshops, and promoting SPWLA within universities through courses and classes.

On a global scale, Nadege has contributed as the Latin America Regional Director in 2018, facilitating the establishment of professional and student chapters in the area. Furthermore, she has volunteered for various SPWLA committees, including technical reviewer for annual conference, scholarship applications, and award nominations.

DISTINGUISHED TECHNICAL ACHIEVEMENT AWARDS



David F. Allen is a Petrophysics Advisor at the SLB Houston Formation Evaluation Center. He received a B.S. in Physics and a B.A. in Economics from Beloit College in 1978 and joined Schlumberger as a field engineer in 1979.

David has developed methods to evaluate thin beds and Low Resistivity Pay for decades. His 1984 paper Laminated Sand Analysis helped launch the era of high-resolution logging and thin bed analysis. In 1997 he

coauthored The Petrophysics of Electrically Anisotropic Reservoirs with Jim Klein (Arco), which laid the foundation for the interpretation of 3D Induction tools.

In 1988 David joined the team developing the first LWD TCOMBO for Schlumberger. By 1990 David had developed software to perform prejob resistivity modeling to steer HA/HZ wells and a multi-physics forward modeling workflow to interpret them. David pursued these ideas further while seconded to Exxon Mobil Upstream Research Co.

David tackled Middle Eastern carbonates at Schlumberger-Doll Research between 1998 and 2005. Working on core – log case studies, David and many co-authors developed methods to unravel micro porous carbonate pore systems. The work came together in CIPHER (a joint development by Saudi Aramco and Schlumberger). Cipher quantifies micro porosity via integration of NMR and image logs. CIPHER is applied routinely by Saudi Aramco and in Brazil.

David coauthored SPWLA Best Papers in 1987, 1997 and 2017. He was a distinguished lecturer for SPWLA in 1991 and for SPE in 2021, and was Chief Petrophysicist for Schlumberger in the late 1990's.



Ron Balliet, Halliburton Global Product Champion for Magnetic Resonance.

He supports Formation Evaluation, Operations, Sensor Design and Software Applications for Halliburton Wireline & Perforating and Sperry Drilling.

His 35+ years involvement in Oilfield NMR has taken him across multiple locations and countries worldwide. In the 1990s, working for NUMAR, he was involved in the initial field testing and development across the U.S.A. and logged the first wireline NMR (MRILs) in Italy, Oman, Angola. As the NMR technology continued to evolve and improve, he participated in the NMR wireline launches and logging in Indonesia and UK.

The late 1990s saw Ron leave Indonesia for Scotland to assume the role of NUMAR Region Operations Manager for Eastern Hemisphere. Under his stewardship, the technology was

commercially launched in Egypt, Norway, The Netherlands and West Africa. Following NUMAR's merger with Halliburton he was transferred to Nigeria. It was truly the people he met that added to both his personal and professional enrichment in many Geographies and Geology.

Ron returned to USA in 2003, and in 2006, assumed the position of Global Product Champion for Magnetic Resonance based out of Houston, Texas.

Throughout his 35+ years career he has been involved with the design and interpretation methods for seven Wireline and LWD magnetic resonance sensors. He has published 20+ Technical papers, seven NMR related patents and has been a member of SPWLA since 1999 and an NMR SIG member. He holds Bachelor of Science Degrees in Geophysics and Geology, University of Minnesota, Institute of Technology.



Dr. Tao Yang is a chief professional and senior specialist in reservoir technology at Equinor. He is a member of the Norwegian Academy of Technological Sciences and the Royal Norwegian Academy of Sciences and Letters. He has vast industrial experience in about 300 fields. Dr. Yang has worked extensively on PVT and gas-based improved oil recovery methods. For the past ten years, he has focused on advanced data analytics and low carbon solutions. Dr. Yang's machine learning

innovation on real-time fluid identification won the "Best Data Management and Application Solution Award" of the World Oil Awards in 2022. The technology has been broadly implemented in Equinor's global assets, significantly generating business value. Dr. Yang has served as chairperson or committee member for numerous conferences and professional organizations, including Special sessions of the SPWLA Annual Symposium, World CCUS Conference, SPE ATCE, SPE EUROPEC, SPE Offshore Europe, PetroWiki steering committee, SPE Data Science and Engineering Analytics Advisory Committee, and SPE Reservoir Advisory Committee. He has reviewed papers for several technical journals, including the roles as technical editor of SPE Journal and editorial board member of the Geoenergy Science and Engineering. Dr. Yang has authored and co-authored about 300 proprietary reports, 54 papers in journals and conferences, 13 patents and 3 research disclosures.

Dr. Yang was selected as an SPE Distinguished Lecturer for the 2017-2018 season and received many industry recognitions, including the SPE Distinguished Membership Award, the SPE Lester C. Uren Award for Technical Excellence, and the EAGE Alfred Wegener Award.

MERITORIOUS SERVICE AWARD



Bernd Ruehlicke is president of Eriksfiord Inc., part of the Eriksfiord group. Bernd contributed to most of the geological applications modules of Recall[®] (Halliburton/Landmark) during his time at Z&S Geologi in Stavanger, Norway. At PGS and Landmark, he built the interface between the Petrobank (Oracle) database and Recall, and worked as Dev-Lead in Houston Halliburton on R&D projects such as the Java DecisionSpace[®] platform. Bernd is the domain expert for image logs and geomechanics

in the Eriksfiord group. He holds a BS in Computer Science and MS in Mathematics from Aarhus University in Denmark and an MBA from the University of Houston. Bernd did hold the position of VP Westside for the Houston Chapter 2020-22 and likes to search for big prime numbers in his spare time while using Eigenvectors helping clients to de-mystify complicated reservoirs geometries.



Emmanuel Caroli is Formation Evaluation Senior Specialist with TotalEnergies. He's graduated from Ecole Normale Superieure, Ecole des Mines de Paris and the IFP School in physical geology, petroleum geology and sedimentary basin modeling. He joined the TotalEnergies company in 2003 as mineral geochemist and worked on CO2 storage and sequestration. After several positions abroad in exploration operations (Argentina, Netherland) and head of petrophysics in Angola, he was

appointed in 2009 at TotalEnergies scientific headquarter in Pau (France) as senior Formation Evaluation advisor. He is now R&D project lead and innovation officer in the domains of subsurface and wellbore evaluation and is actively working on machine learning applied to petrophysics and wellbore physical inversion. Emmanuel has published more than 30 papers in SPWLA, SPE, AAPG or EAGE. He has been serving SPWLA France since 2015 in various positions and is currently SPWLA France president



Leonardo Gonçalves is a Senior Petrophysicist who joined Petrobras in 2006. He has over ten years of experience in core analysis and has been working on well-logging interpretation, formation evaluation, and reservoir characterization since 2015. Leonardo received his BSc degree in Geology from the Federal University of Rio de Janeiro (UFRJ), Brazil. He also completed his master's degree at UFRJ, focusing on petrophysical evaluation applied to pre-salt carbonates. Additionally, Leonardo

has been involved with the SPWLA Brazil Chapter since 2023, serving as Secretary and currently as VP Communications.



Lucas Abreu Blanes de Oliveira is a Senior Petrophysicist for Petrobras in Rio de Janeiro, Brazil. He received his BSc degree in Geology in 2011 and his MSc degree in Engineering in 2022 from the University of São Paulo. He joined Petrobras in 2012, starting as a well-site geologist. Since 2015 he's been working on petrophysical and geophysical integration, formation evaluation, reservoir characterization, artificial intelligence applied to well logs and petrophysical data, and corporative education.

He was president of the SPWLA Brazil Chapter during the 2022-2023, being one of those responsible for bringing the SPWLA International Symposium to Brazil for the first time. Between 2022 and 2023, he was considered Global Distinguished Speaker for his outstanding contribution to the Society of Petrophysicists and Well Log Analysts.



Neal Cameron graduated with a B.B.A. in 2006 from Texas State University and joined the Oil and Gas industry in early 2012. His first position was as a Sales Engineer for one of the largest Global Oil and Gas Service companies. During his time in that role, he was charged with Sales and Account Management covering clients with drilling operations in the major oil and gas basins in the U.S.A. After 3 years, Neal joined GEOLOG International as the North America Sales Manager and is

currently responsible for Business Development for the US Onshore, Alaska, Offshore Gulf of Mexico and Caribbean Region as well as supporting other international projects for clients headquartered in the US. The main areas he is focused on are real-time Drilling monitoring and optimization, Reservoir Characterization, Geochemistry, Formation Evaluation and Geochemical Laboratory Services. He has also participated in promoting Client workshops, seminars and supported in sponsoring oil and gas industry conferences, symposiums, and local chapters. Neal has served as the SPWLA VP Houston Chapter Westside for the past 2 years (2022 to 2024). During his tenure, he increased the number of sponsors and members in the chapter through advertising and marketing activities, improved attendance each year at the Chapter's Annual Houston Technology Show and played a key role in the Global SPWLA Annual Symposium in 2023 at Lake Conroe (Field Trip Transportation Chair and Golf Tournament Committee).



Dr. S. Sherry Zhu is a Research Science Specialist at Aramco Research Center – Boston. Sherry received a PhD in Chemistry from the University of Pennsylvania and worked as a postdoctoral fellow in MIT before transitioning to industry. With an extensive career spanning the chemical and oil sectors, Sherry has acquired broad expertise in research and development as well as manufacturing of functional materials.

Sherry spearheaded the development of degradable materials, derived from renewable resources, for downhole applications, a contribution pivotal to the commercial success of degradable diverters. Presently, Sherry's research is centered on pioneering sustainable materials and nanotechnologies tailored for oil field applications. Sherry led a team

of scientists who developed NanoTags for labelling drill cuttings, enhancing the depth accuracy of mud logging operations. This groundbreaking technology underwent successful field tests and garnered prestigious honors, including the IChemE 'Highly Commended' Award for the Oil & Gas sector in 2020, the Special Meritorious Awards for Engineering Innovation (MEAs) by E&P in 2021 and finalist recognition at the IChemE Global Award in 2023.

Since 2018, Sherry has served as the Treasurer of the Boston Chapter of SPWLA. In this capacity, she has managed financial transactions and corporate donations, ensuring compliance with tax regulations by annually filing IRS Form 990-N to maintain the Chapter's tax-exempt status. Sherry actively contributed to the organization of the "Porous Media: Structure, Flow, and Dynamics Workshop" in 2019 and the SPWLA 62nd Annual Symposium in 2021, during which the Boston Chapter earned the Best Professional Chapter award.

MERITORIOUS TECHNICAL ACHIEVEMENT AWARDS



Artur Posenato Garcia works as a petrophysicist for Chevron Technology Center in Houston. As part of his work, he engages with Chevron's business units to develop new workflows to improve the assessment of water/hydrocarbon saturation in unconventional plays through the interpretation of advanced well-log measurements. Artur earned his PhD in petroleum engineering (2020) and his MSc in computer science (2024) both from The University of Texas at Austin. As part of his academic and

professional research, he developed petrophysical models to improve interpretation of petrophysical/geophysical measurements in complex formations and pore-scale numerical simulators to enhance the understanding of the different petrophysical/electrochemical properties. The outcomes of his technical work resulted in 60+ papers and presentations including 20 peer-reviewed journal publications and 2 patent applications. Artur was designated an SPWLA Distinguished Speaker in 2017-2018, 2018-2019, and 2023-2024. He served as the president of the student chapter of SPWLA at UT Austin (2018-2019) and he continues to serve the petrophysics community as the VP Downtown of the SPWLA Houston chapter, as a technical reviewer for SPE Journal, Geophysics Journal, Petrophysics, Journal of Applied Geophysics, etc., as a technical committee member for the SPWLA 2024 NMR SIG Conference, as a judge for the 2024 SPWLA ISPC, and as an Associate Editor for the SPE Journal. Recently, he has received the SPE Technical Reviewer Outstanding Service Award - SPE Journal (2023).



Carlos Francisco Beneduzi is currently retired. He worked 42 years for Petrobras; 36 years of his career in the Exploration Dept. helding positions in data acquisition, formation evaluation and petrophysics with the activity focused in acoustic acquisition, processing and interpretation.

Last years in the Dept were spent managing Petrophysics training programs for technical staff. He finished his career working for 6 years in the Petrobras Research Center (Cenpes) developing projects related to acoustic data processing and application in petrophysical analysis (fluid identification, petrophisical parameters)

He holds BSc degree in Geology from UFRGS (Universidade Federal do Rio Grande do Sul) (1977).



Martin Poitzsch has 30 years' experience leading R&D into novel formation evaluation technologies. Joining Schlumberger amid the "LWD Revolution," Martin next jumped into the "NMR Revolution," leading SLB's NMR While Drilling team to the first tools and field-test campaigns. He then led 2nd-generation Wireline NMR tool development and manufacturing, with SLB capturing majority market share by 2001. After managing the worldwide Wireline R&D portfolio for 2 years, including

many new tools for formation testing, cement logging, PL, sonics, and tensor resistivity, Martin guided the Sensor Physics department in Research for 8 years, pursuing many new directions in gravity, downhole reservoir micro-sample analysis, sourceless nuclear and cosmic-ray logging, and other applications of latest academic or other industries' advances. He served as Completions Sensing Architect for the oil industry's most advanced integrated SmartWell completions project, developed by SLB in collaboration with Saudi Aramco.

Since 2014, he heads an innovative group in Saudi Aramco working to apply nanomaterials and methods to improving reservoir recovery and characterization. Alongside many cutting-edge discoveries and publications, several integrated technologies are in field-testing, including Drilling NanoTags, Advanced Interwell Tracers, and Nano-Encapsulated Surfactant. Recent work seeks to apply similar methods toward sustainable CO2 and H2 applications in the reservoir.

Prior to joining the oilpatch, Martin earned his Ph.D. in Physics at Harvard and served as a National Research Council postdoctoral fellow at the National Institute of Standards and Technology in Boulder, Colorado, where he designed and constructed the first-ever liquid-helium-temperature RF ion trap atomic clock prototype.



Paulo Denicol completed his BSc degree in Geology at Universidade Federal da Bahia in 1980. He joined Petrobras Exploration in 1981 as a field geologyst in Macaé Rj. In 1983 he joined the Logging operations group working with well log processing and interpretation. In 1996, Paulo Denicol completed a Master degree program in Petrophysics at Imperial College, London. In 2001, He moved to Petrobras headquarter

in Rio de Janeiro to work with the integration of core, log, and fluid data. He was also manager of the Formation Evaluation and Petrophysics group and instructor for the Petrobras University.

Retired in 2016.



Rudolfo Beer, Senior geologist – petrophysicist received a BS degree in geology from Parana Federal University in 1976 and a MSc degree in petroleum geoengineering from Campinas State University in 1994.

Joined Petrobras in 1977 working as field and well site geologist in the Sergipe-Alagoas Basin. In 1981 moved to Rio de Janeiro to work with formation evaluation. After the master program joined the reservoir

characterization group in 1995, working in petrophysical characterization for the major deep-water siliciclastic fields in Campos Basin and the pre-salt carbonates in Santos Basin. As senior consultant in Petrobras oversaw several new technologies research programs including implementation of new LWD tools for geosteering and real time formation evaluation, digital rock petrophysics, electromagnetic interwell mapping and knowledge management.

Joined HRT Oil & Gas in 2010 working with petrophysical evaluation, responsible for the company's well logging formation evaluation activity and well site geologic monitoring. In 2015 joined Rosneft Brasil as Deputy Project Manager for the Solimões Gas Project in the Solimões Basin, responsible for the project operations and the gas reserves evaluation aiming achieving an economic exploitation project.

Since 2022 works as independent consultant elaborating petroleum exploration programs for small independent Brazilian companies.

In 2002, jointly with Berthold Kriegshauser and others, founded and was the 1st president of the SPWLA Brazil Chapter.

Author and co-author of more than 20 papers for international magazines and Petrobras' internal seminars, lectured well logging techniques for Petrobras, IBP, HRT and Rosneft internal courses.

YOUNG PROFESSIONAL TECHNICAL AWARDS



Alexandra Cely is a leading engineer at Equinor ASA with an expertise in reservoir fluid analysis and data analytics across the entire reservoirto-process value chain. She started her career in the oil and gas industry in SLB-M-I Swaco in 2010, as a research chemist, working in developing novel production chemistries. She joined Equinor ASA in 2012, as flow assurance engineer, working in field development projects.

Transitioning to the PVT and fluid analysis group in 2019, she spent five years in the Real Time Fluid Identification team, as the leading researcher on reservoir fluid property prediction, using cuttings and mud gas data. In this role, she applied her background in thermodynamics, chemistry, and data science to develop real-time solutions for early reservoir fluid type identification. She authored and co-authored several papers presented at SPWLA annual symposiums, EAGE and SPE conferences, and published in the Petrophysics journal. She also contributed to multiple patent applications as co-inventor and is part of the SPWLA distinguish Speaker Program 2024.

As part of the Low Carbon Solutions team, she developed thermodynamic modelling software tools for hydrogen storage and transportation. In 2024, Alexandra assumed the role of Digital Lead for the Global External Analysis organization, where she leads the digital transformation and innovation efforts within this business cluster. Alexandra holds a Master of Science in Environmental Offshore Engineering with a major in Chemistry from the University of Stavanger, and a Bachelor of Science in Chemical Engineering from the National University of Colombia.



Katy Larson specializes in subsurface characterization and operations for injection fields—water flood, steam flood, and gas injection—with a current focus on carbon sequestration (CCS). She holds a special interest in injection surveillance and optimization of large-scale capital execution projects, specifically the cross-disciplinary intersection of petrophysics with operations and reservoir maintenance. Her regulatory and operations expertise led to her current role at Tallgrass Energy as

Geoscience Compliance Manager overseeing CCS permitting, monitoring, and compliance across several U.S. basins.

Preceding Tallgrass, Katy held a role at Battelle as a CCS Commercial Project Manager focused on early-stage scoping and permitting of CCS projects. Prior to Battelle, Katy was a Petrophysicist at California Resources Corporation (f. Occidental Petroleum) where she operated 90+ primary and secondary production fields and completed in excess of \$1B in projects during her tenure. She also held positions at Stone Energy (acq. Talos Energy) as a New Ventures Geologist and Schlumberger WesternGeco as a Seismic Processing Geophysicist. Katy earned a Geology M.S. from University of Louisiana at Lafayette and a Geology B.S. from Louisiana State University.

Katy previously served as SPWLA President, Vice-President, and Secretary of the Bakersfield, California Chapter and as Secretary of the CCS SPWLA Special Interest Group. Katy's enthusiasm and expertise of conventional and regulatory petrophysics has been recognized by peers as she has taught classes at the SPWLA Internal Convention (2022, 2023) and has presented to the Bakersfield SPWLA Chapter and SPE New Energies Group. Katy resides in Bakersfield, California, and enjoys spending time outside with her family.



Lei Fu, Ph.D., is a data scientist at Aramco Americas, where he leverages artificial intelligence to innovate in petrophysics and other domains. A graduate of Rice University with a doctorate in Earth Science, Lei has dedicated seven years to integrating AI with petrophysics and other domains, significantly accelerating digitalization to enhance exploration and production efficiency.

His research has focused on integrating modern computational methods with traditional petrophysical analysis, complementing domain expertise with cutting-edge technologies. This work is documented in 15 peer-reviewed publications across top-tier journals, over 20 conference presentations, and 5 patents.

His role as Vice Chairman of the Society of Petrophysicists and Well Log Analysts (SPWLA) Petrophysical Data-Driven Analytics (PDDA) Special Interest Group exemplifies his leadership, organizing significant initiatives like the 2021 SPWLA PDDA Machine Learning Competition which benefited 250 global participants. Lei's commitment extends beyond technical achievements to fostering educational growth within the petrophysics community through workshops and courses, equipping professionals with the skills to utilize new technologies. This prestigious recognition from SPWLA celebrates his pivotal role in bridging AI with geological practices, markedly improving subsurface mapping and predictive analytics, which in turn reduces costs and improves operational efficiency.

Driven by a passion for continuous learning and technological innovation, Lei is committed to developing innovative solutions to complex industry challenges. He is grateful for the opportunity to contribute to the field and remains committed to fostering technological advancements that create value for the petrophysics community and industry.



Mohammad K. Aljishi is a Petroleum Engineer with over five years of expertise in petrophysics, formation evaluation, and field development. During his tenure at Saudi Aramco, Mohammad led critical formation evaluation efforts for major oil fields, delivering in-depth analysis of advanced logging data to optimize development plans. His contributions extend to research, where he has published technical work in and filed patents for innovative technologies aimed at enhancing operational

efficiency and reducing risks in oil field operations.

Mohammad's commitment to professional development and industry excellence is demonstrated through his active involvement in the Society of Petrophysicists and Well Log Analysts (SPWLA). He served as the Vice President for Planning and Strategy for the SPWLA-Saudi Arabia Chapter, where he organized impactful events and fostered professional development opportunities for industry professionals. He is currently an active member in the students' chapter in the University of Oklahoma.

Mohammad earned a Bachelor of Science in Petroleum Engineering from Louisiana State University in 2018 and is pursuing a Master of Science in Petroleum Engineering at the University of Oklahoma while serving as a Graduate Research Assistant in the Integrated Core Characterization Center.



Wenlian Xiao is Professor of Petroleum Engineering at Southwest Petroleum University (SWPU). He received his PhD in Oil & Gas Field Development Engineering from (SWPU) in 2013, and was a visiting scientist at MIT between 2017 and 2018. During working at SWPU, he maintained research collaborations with MIT scientists. He is the leader of Youth Science and Technology Innovation Team of Unconventional Rock Physics (SWPU), and the Vice President (also Founder) of SPWLA

Southwest China Chapter. He focuses his work on petrophysics and its application in Oil & Gas Field Development. He and his team invented a series of technical patents and has published a series of quality peer reviewed papers regarding petrophysics and its applications on Petrophysics, SPE Journal, Journal of Geophysical Research: Solid Earth, Fuel, Energy, Journal of Petroleum Science and Engineering and Petroleum Science etc., which made the rock physics from theory to practice. In recent years, regardless of the difficulty caused by pandemic, he has made dramatic efforts to promote the application of petrophysics to Oil & Gas Field Development and give remarkable talks to petrophysics and Oil & Gas Field Development community either online or in person.

PIONEER AWARD



W.C. Chew received all his degrees from MIT. His research interests are in wave physics, specializing in fast algorithms for multiple scattering imaging and computational electromagnetics in the last 30 years. His recent research interest is in combining quantum theory with electromagnetics, and differential geometry with computational electromagnetics. After MIT, he joined Schlumberger-Doll Research in 1981. In 1985, he joined U Illinois Urbana-Champaign, was then

the director of the Electromagnetics Lab from 1995-2007. During 2000-2005, he was the Founder Professor, 2005-2009 the YT Lo Chair Professor, and 2013-2017 the Fisher Distinguished Professor. During 2007-2011, he was the Dean of Engineering at The University of Hong Kong. He joined Purdue U in August 2017 as a Distinguished Professor. He has co-authored three books, many lecture notes, over 450 journal papers, and over 600 conference papers. He is a fellow of various societies, and an ISI highly cited author. In 2000, he received the IEEE Graduate Teaching Award, in 2008, he received the IEEE AP-S CT Tai Distinguished Educator Award, in 2013, elected to the National Academy of Engineering, and in 2015 received the ACES Computational Electromagnetics Award. He received the 2017 IEEE Electromagnetics Award. In 2018, he served as the IEEE AP-S President. He was a distinguished visiting professor at Tsinghua U, China, Hong Kong U, and National Taiwan U.

OUTSTANDING PROFESSIONAL CHAPTER

SPWLA France Chapter

OUTSTANDING STUDENT CHAPTER

Batangas State University, in Batangas City, Philippines

SYMPOSIUM BEST PAPER PRESENTATION 2023

TITLE: Changing The Game: Well Integrity Measurements Acquired On Drill Pipe PRESENTER: Andrew Hawthorn

SYMPOSIUM BEST POSTER PRESENTATION 2023

TITLE: A Universal Data Format for Wellbore Logs PRESENTER: Thomas Bradley

OUTSTANDING PETROPHYSICS JOURNAL PAPERS 2024

TITLE: Use of Symbolic Regression for Developing Petrophysical Interpretation Models

AUTHORS: Songhua Chen, Wei Shao, Huiwen Sheng, Hyung Kwak Published, 2023, April, 174–190, DOI: 10.30632/PJV64N2-2023a3.

TITLE: Evolution of Casedhole Nuclear Surveillance Logging Through Time AUTHOR: Dale E. Fitz

Published: 2023, August, 473–501, DOI: 10.30632/PJV64N4-2023a1

 TITLE: Integrated Formation Evaluation for Site-Specific Evaluation, Optimization, and Permitting of Carbon Storage Projects
 AUTHORS: Robert Laronga Erik Borchardt, Barbara Hill, Edgar Velez, Denis Klemin, Sammy Haddad, Elia Haddad, Casey Chadwick, Elham Mahmoodaghdam, Farid Hamichi
 Published: 2023, October, 580–620, DOI: 10.30632/PJV64N5-2023a1

TITLE: Applications of Two-Dimensional Laboratory Higher-Frequency NMR in Unconventional Shale Characterization AUTHORS: Z. Harry Xie, Omar Reffell Published: 2023, December, 848–863, DOI: 10.30632/PJV64N6-2023a3

OUTSTANDING PETROPHYSICS JOURNAL REVIEWER 2024 Joe Comisky

DISTINGUISHED SPEAKERS 2023-2024

lan McGlyn Jie Wang Willian Andrighetto Trevizan Alexandra Cely Tarek S. Mohamed Olabode (Bode) Ijasan Gabor Hursan Artur Posenato Garcia Z.Harry Xie Andrew Hawthorn

GLOBAL DISTINGUISHED SPEAKERS 2023-2024

Philip Tracadas Mohammed Al-Hamad Jiajie Wang

SAFETY

This information was carefully prepared for the attendees and spouses of the 65th SPWLA Annual Symposium. Please read and, whenever possible, keep it handy. It includes key addresses and outlines some actions you can take to safeguard against criminal actions while in Rio de Janeiro. Our intention is not to instill fear about Rio, but rather to empower you to feel secure by adopting best practices.

Travel insurance

We recommend purchasing a travel insurance policy for your trip.

Crimes

The most targeted items by assailants are personal purses, PC backpacks, cellphones, watches, and jewelry. To avoid being assaulted, some actions are recommended:

- **Maintain a low-profile** and avoid obvious displays of wealth, while visiting public places. Do not wear conspicuous clothing or jewelry or carry excessive money.
- Prefer **leaving your passport and valuables in a safe place** but carry a copy of your passport and another form of photo ID. Carry only the necessary bank card, leave the remaining in the safe of your room. Prefer using a theft-safe cross body bag.
- Keep car windows closed during your car trip.
- Avoid talking on the phone when walking on the street.
- Avoid visiting dark, isolated areas, especially during the night. Do not go on to beaches after dark.
- If you are lost, go into a nearby business or hotel to ask for help.
- Be **careful when you withdraw money**. Prefer doing so during daylight hours, going with a friend if you can, and trying to find an ATM located indoors. After withdrawing money, make sure you have plans to return to your place immediately so you're not walking around with loads of cash on you.
- Have an **emergency phone** on hand.
- Do not visit informal housing developments (commonly referred to in Brazil as **favelas** or **comunidades**), even on a guided tour. The security situation in many favelas is unpredictable and can rapidly change.
- Avoid entering **unpaved**, **cobbled**, **or narrow streets** which may lead into a favela tourists have been shot after accidentally entering favelas.
- Keep your belongings close and **avoid taking valuables to the beach**. Don't leave your valuables unattended when you swim. I use a waterproof fanny pack, or you can ask someone to watch your things if you feel comfortable doing so.

Important contacts

- Federal Police 194
- Military Police 190
- Women's Police Station 180

SAFETY

Outdoor activities

- Coastal waters can be dangerous. Prefer visiting a beach near a lifeguard station and pay attention to warning flags.
- Avoid swimming where there are strong currents and follow the instructions and warnings of local authorities.
- Robberies can occur on hiking trails. If you intend on trekking: hire an experienced guide from a reputable company, never do so alone, and inform a family member or friend of your itinerary.

Important contacts

- SAMU (Emergency Mobile Care Service) 192
- Fire Department 193
- Civil Defense 199
- Federal Police 194
- Military Police 190
- Women's Police Station 180

Transportation

- Prefer booking a taxi than driving.
- Avoid getting taxis in the streets. Ask for help at the hotel reception.
- We recommend Uber app Black service. Booking a Uber from your own account is the best option since you have a set price, you avoid carrying money, and can share your trip for added security.

Healthy and medical

- Protect yourself from insect bites and avoid insect-borne diseases. Use insect repellents all time and cover exposed skin long-sleeved shirts and long pants if vegetated areas. If you use both sunscreen and insect repellent, apply the sunscreen first and then the repellent.
- Drink bottled water with sealed lids.
- Avoid street food. The hot weather may cause food to spoil.
- Always inform the hotel, restaurants if you have any alimentary restriction.
- Avoid contact with monkeys and other mammals. If you're bitten or scratched by an animal, get medical help immediately.
- If you need medical assistance, prefer private health care at hospitals and clinics.

Important contacts

- SAMU (Emergency Mobile Care Service) 192
- Fire Department 193
- Civil Defense 199

SAFETY

Key nearby addresses Medical emergencies:

Hospital Copa D'Or: Emergência 24h, Pronto Atendimento, Centro Cirúrgico
 Rua Figueiredo de Magalhães, 875 - Copacabana, Rio de Janeiro - RJ, 22031-011, Brasil

- Casa de Saúde São José
- R. Macedo Sobrinho, 21 Humaitá, Rio de Janeiro RJ, 22271-080, Brasil
- São Vicente: Emergência 24h
- R. João Borges, 204 Gávea, Rio de Janeiro RJ, 22451-100, Brasil



Security:

Special Tourism Support Bureau / Delegacia Especial de Apoio ao Turismo – DEAT
 Av. Afrânio de Melo Franco, 159 - Leblon, Rio de Janeiro - RJ, 22430-600, Brasil

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Executive Director Sharon Johnson SPWLA Houston, TX 77017 (+1) 713-947-8727 sharon@spwla.org
SPWLA CHAPTERS PROFESSIONAL

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UPN "Veteran" Yogyakarta Student Chapter

CHAPTER-AT-LARGE AND SIGS

Acoustics SIG Alternative Subsurface/Energy Transition SIG Borehole Imaging – BHI SIG Education SIG Formation Testing SIG HAHZ - High Angle and Horizontal Wells SIG Hydrocarbon Reserves SIG NMR SIG Nuclear Logging SIG PDDA SIG Resistivity SIG Society of Core Analysts (SCA)

HIGHLIGHTS OF THE SOCIETY OF PETROPHYSICISTS AND WELL LOG ANALYSTS

The Society of Petrophysicists and Well Log Analysts (SPWLA) is a nonprofit corporation dedicated to the advancement of the science of petrophysics and formation evaluation, through well logging and other formation evaluation techniques and to the application of these techniques to the exploitation of gas, oil and other minerals. Founded in 1959, SPWLA provides information services to scientists in the petroleum and mineral industries, serves as a voice of shared interests in our profession, plays a major role in strengthening petrophysical education, and strives to increase the awareness of the role petrophysics has in the Oil and Gas Industry and the scientific community. SPWLA the world's largest International Petrophysics Professional Society celebrates 64 years with a membership of 2100 representing 60 countries.

Offering global exposure through 34 professional chapters, 11 SIG's, 23 student chapters and 1 Chapter at Large (SCA). SPWLA chapters meet regularly for brief technical scientific discussions and for fellowship among peers having a common professional interest in well logging. Benefits of membership in SPWLA include, online digital copies of Petrophysics Journal, online digital copies of The SPWLA Newsletter, discounts to meetings held by the international parent including the annual five-day conference (3-day technical program, 2-day workshops, field trips and more), Spring and Fall Topical Conferences and on-line training classes via webinar or GoTo meetings. No charge monthly webinars.

Classifications of membership in the Society to accommodate the needs and qualifications of interested persons. These membership classes are Honorary Member, Member, Member Group II, Senior Member, Student Member and Student Member Group II.

Industry awards are given annually to individuals nominated by their peers. The highest awards of the Society are the Gold Medal Award for Technical Achievement and the Gold Medal Award for Career Service, each of which the status of Honorary Member is given.

The SPWLA was incorporated under the laws of the state of Oklahoma on December 14, 1959. The Society has a Certificate of Authority to conduct affairs in the state of Texas and maintains its business office in Houston. To obtain further information about the SPWLA, you are invited to visit the website or contact our business office:

SPWLA 8866 Gulf Freeway, Suite 320 Houston, TX 77017 USA Phone: (713) 947-8727 www.spwla.org

FUTURE SPWLA SYMPOSIUM SITES



DUBAI Hosted by SPWLA Dubai Chapter 2025

USA Hosted by SPWLA Bakersfield, Denver and Midland Chapters 2026