Technical Program

Session 1A – Production Logging

SPWLA-2021-0001  PRODUCTION OPTIMIZATION OF SANDING HORIZONTAL WELLS USING A DISTRIBUTED ACOUSTIC SENSING (DAS) SAND MONITORING SYSTEM: A CASE STUDY FROM THE ACG FIELD IN AZERBAIJAN
  Zahid Hasanov, Parviz Allahverdiyev and Fuad Ibrahimov, BP; Alberto Mendoza, Pradyumna Thiruvenkathan, Lilia Noble and Jonathan Stapley, LYTT Limited

SPWLA-2021-0111  UTILIZING ULTRASONIC AND PULSED-EDDY CURRENT TECHNOLOGIES TO MAP THE LOCATION OF FIBER-OPTIC CABLE AND CLAMPS: A CASE STUDY
  Roddy Hebert, Rojelio Medina, JC Pinkett and Tyler Costa, Halliburton

SPWLA-2021-0003  DOPPLER VS. SPINNER PLT SENSING FOR HYDROCARBON VELOCITY ESTIMATE BY DEEP-LEARNING APPROACH
  Klemens Katterbauer and Alberto Marsala, Saudi Aramco; Virginie Schoepf and Linda Abbassi, Openfield Technology

Session 1B – Conventional Reservoir Petrophysics - I

SPWLA-2021-0004  ADDRESSING RESERVOIR HETEROGENEITY BY INTEGRATION OF GEOCHEMISTRY AND PETROPHYSICAL Logs IN CARBONATE PROSPECTS
  Kemal C. Hekimoglu, Filippo Casali and Antonio Bonetti, Geolog International

SPWLA-2021-0005  AN ADVANCED PETROPHYSICAL ORIENTED NUMERICAL METHOD FOR RELIABLE ASSESSMENT OF MECHANICAL PROPERTIES IN CARBONATE FORMATIONS AT THE PORE-SCALE DOMAIN
  Mehdi Teymour and Zoya Heidari, The University of Texas at Austin

SPWLA-2021-0006  DECIPHERING LOW RESISTIVITY PAY TO DERISK A COMMERCIAL DISCOVERY: CASE STUDY FROM THE NORWEGIAN SEA
  Mohammad Ibrahim Khan, Equinor; Harish Datar and Subhadeep Sarkar, Schlumberger; Bjarne Rafaelsen, Equinor

Session 2A – Borehole Imaging

SPWLA-2021-0007  WELLBORE IMAGES DIGITAL FUSION: BEYOND SINGLE-SENSOR PHYSICAL CONSTRAINTS
  Simone Di Santo, Nadege Bize-Forest and Isabelle Le Nir, Schlumberger; Carlos Maeso, Retired

SPWLA-2021-0008  TAMING THE THUNDER HORSE WITH AXES AND VECTORS
  Bernd Ruehlcke, Andras Uhrin, Zbynek Veselovsky and Markus Schlaich, Eriksfiord

SPWLA-2021-0009  FIELD-TESTING A THROUGH-THE-BIT HIGH-DEFINITION ELECTRICAL BOREHOLE IMAGER FOR OIL-BASED MUD
  Richard Bloemenkamp, Elia Haddad, Nadege Bize-Forest, Laetitia Comparon and Peter Schlicht, Schlumberger

Session 2B – Deepwater Reservoir Analysis

SPWLA-2021-0010  DIGITAL FLUID SAMPLING IN DEEP WATER RESERVOIRS USING RESERVOIR FLUID GEODYNAMICS: THE BEGINNING OF THE DIGITAL FLUID SAMPLING REVOLUTION
  Camilo Gelvez, The University of Texas at Austin; Gerardo Cedillo, Eric Soza, Doris Gonzalez, Benjamin S. Slotnick, Sol Moreno, Wilson Pineda and Milad Saidian, BP America; Oliver C. Mullins, Scott Paul, Jesus Cañas and Alok Kulkarni, Schlumberger

SPWLA-2021-0011  A PRACTICAL GUIDE TO EFFECTIVE DEEP-WATER FLUID SAMPLING WHILE DRILLING
  Matt Wandrostrat, Consultant; Gerard Simms, LLOG Exploration Inc.; Femi Adegbola, Steve Smith and Vincent Liaw, Baker Hughes
Session 3A – Formation Rock Analysis

SPWLA-2021-0012

ENHANCING THE UNDERSTANDING OF ASPHALTENE PRECIPITATION: A NOVEL APPROACH UNDER IN-SITU CONDITIONS
Rohin Naveena-Chandran, Farrukh Hamza, Gibran Hashmi and Jason Rogers, Halliburton; John Meyer and Sara Chapman, Kosmos Energy

SPWLA-2021-0013

THE IMPACT OF OVERBALANCED DRILLING FROM EXPLORATION/APPRaisAL WELLS TO FIELD DEVELOPMENT PLAN
Mohammadhossein Mohammadlou, Matthew Guy Reppert, Roxane Del Negro and George Jones, Neptune Energy Norway

SPWLA-2021-0014

NANOTAGS FOR IMPROVED CUTTING DEPTH CORRELATION
Martin E. Poitzsch, S. Sherry Zhu and Marta Antoniv, Aramco Research Center; Nouf M. Aljabri and Alberto M. Marsala, Saudi Aramco, EXPEC ARC

SPWLA-2021-0015

ADAPTATION OF CRUSHED ROCK ANALYSIS TO INTACT ROCK ANALYSIS FOR IMPROVING WATER SATURATION ASSESSMENT AND FAST PRESSURE DECAY PERMEABILITY QUANTIFICATION
Kai Cheng, J. Alex Zumberge, Stephanie E. Perry and Patrick M. Lasswell, GeoMark Research, Ltd

Session 3B – Well Integrity

SPWLA-2021-0016

A RESONANCE-BASED THROUGH-TUBING CEMENT EVALUATION TECHNOLOGY
Jie Li, Qinshang Yang, Jinsong Zhao, Jeff Olson, Marvin Rourke, GOWell International LLC; Mohamed Larbi Zeghlache, Saudi Aramco–EXPEC Advanced Research Center

SPWLA-2021-0017

APPLICATION OF ELECTROMAGNETIC TECHNOLOGY FOR CORROSION MONITORING IN WELLS WITH DUAL COMPLETIONS
Junwen Dai and Ahmed E. Fouda, Halliburton

SPWLA-2021-0018

SUCCESSFUL SAND PRODUCTION MANAGEMENT THROUGH ADVANCED ANALYSIS OF WELL INTEGRITY LOGS IN CASABE FIELD, COLOMBIA
Cristian Escarraga, Schlumberger; Emiro Leon, Ecopetrol; Marcia Benavides and Tatiana Taborda, Schlumberger

Session 4A – Brownfields Petrophysics

SPWLA-2021-0019

SIDE FAULT MAPPING ENABLED BY 2D TRANSVERSE INVERSION ON NEW DEEP DIRECTIONAL RESISTIVITY MEASUREMENTS
Michael Thiel, Haifeng Wang, Dzevat Omeragic and Jean-Michel Denichou, Schlumberger; Barry Goodin, Vermillion Oil & Gas Australia Pty Ltd

SPWLA-2021-0020

UTILIZING NEAR AND FAR FIELD BOREHOLE MEASUREMENTS FOR A COMPREHENSIVE CARBONATE FRACTURE CHARACTERIZATION
Amr M. Serry, Sultan D. Al-Hassani, Shafiq N. Ahmed, Owais A. Khan, Hassan F. Aboujmeih, Hasan Zakaria and Olivier P. Pippi, ADNOC Offshore; Israa A. Salim, Amro Abdel-Halim and Adam Donald, Schlumberger

SPWLA-2021-0021

INTRINSIC CARBON-OXYGEN LOGGING FOR ENHANCED CONSISTENCY OF RESERVOIR SATURATION MONITORING
Shouxiang Mark Ma, Saudi Aramco; Nacer Guergueb, Weijun Guo and Mahmoud Eid, Halliburton

Session 4B – New Borehole – Logging Technologies

SPWLA-2021-0022

WELLSITE FULL WAVEFORM SONIC INTERPRETATION
J. Adam Donald and Erik Wielemaker, Schlumberger; Chris Holmes, Denison Gas and Tom Neville, Asia-Pacific Formation Evaluation Services

SPWLA-2021-0023

CAN A NEW DOUBLE PARTICLE DETECTOR-CLYC (CS$_2$LiYCl$_6$;CE) BE USED IN PN LOGGING FOR TIGHT GAS EVALUATION?
Qixuan Liang, Feng Zhang, Xiaoyang Zhang, Qian Chen and Jilin Fan, China University of Petroleum (East China)

SPWLA-2021-0024

DECIPHERING THE CAPABILITIES OF LOOK-AHEAD METHODS IN LWD
Session 5A – Formation Fluid Analysis – I

SPWLA-2021-0025
PIioneerIng APPLICATION OF EMERGING TECHNOLOGIES TO THE CHALLENGE OF SAMPLING NEAR-SATURATED FLUIDS IN TIGHT RESERVOIRS
Brett Wendt, Adam Lewis, ConocoPhillips Alaska; German Garcia and Hadrien Dumont, Schlumberger

SPWLA-2021-0026
IMPROVING RESERVOIR TESTING AND SAMPLING IN H2S CONTAMINATED FLUIDS BY ADAPTING STATE-OF-THE-ART SEMICONDUCTOR THIN FILM TECHNOLOGY FOR DOWNHOLE TESTER TOOLS
Jimmy Price, Darren Gascooke, Anthony Van Zuijlekom and Christopher Jones, Halliburton

SPWLA-2021-0027
DEEP TRANSIENT TESTING DIGITAL PRODUCTS CREATE NOVEL REAL-TIME RESERVOIR INSIGHTS

SPWLA-2021-0028
COMPARATIVE SIMULATION OF WATER-BASED MUD-FILTRATE INVASION IN HIGH-PERMEABILITY AND TIGHT SANDSTONE RESERVOIRS USING LARGE-SIZED FORMATION MODULES
Junchen Wu, Yiren Fan and Shaoqiu Deng, School of Geosciences, China University of Petroleum (East China); Ruokun Huang, Research Institute of Petroleum Exploration and Development, PetroChina Tarim Oilfield Company; Fei Wu, Suzhou Niumag Analytical Instrument Corporation; Zhongtao Wang, China Petroleum Logging CO.LTD.

Session 5B – Core Analysis

SPWLA-2021-0029
A DEEP-LEARNING APPROACH FOR LITHOLOGICAL CLASSIFICATION USING 3D WHOLE CORE CT-SCAN IMAGES
Kurdistan Chawshin, Carl Fredrik Berg, Damiano Varagnolo, Norwegian University of Science and Technology; and Olivier Lopez, Equinor ASA

SPWLA-2021-0030
A NEW OPTIMIZATION METHOD FOR ENHANCED FORMATION EVALUATION AND ROBUST PHYSICS-BASED AUTOMATIC ROCK CLASSIFICATION USING HIGH-RESOLUTION CT-SCAN IMAGE DATA AND CONVENTIONAL WELL LOGS
Andres Gonzalez and Zoya Heidari, The University of Texas at Austin; Olivier Lopez, Equinor

SPWLA-2021-0031
IMPACTS AND LESSONS LEARNED FROM AN APPLIED CASE STUDY IN THE WILLISTON, UINTA AND DJ BASINS UTILIZING OPEN VERSUS CLOSED RETORT QUANTIFICATION
Stephanie E. Perry, J. Alex Zumberge and Kai Cheng, GeoMark Research Ltd.

SPWLA-2021-0032
UNCERTAINTY QUANTIFICATION BY MONTE CARLO SIMULATION OF LAB-DERIVED SATURATION DATA FROM SPONGE CORES
Mohammed Alghazal and Dimitrios Krinis, Saudi Aramco

Session 6A – Dielectric

SPWLA-2021-0033
DEEP DIELECTRIC-BASED WATER SATURATION IN FRESHWATER AND MIXED SALINITY ENVIRONMENTS
Ping Zhang, Wael Abdallah and Gong Li Wang, Schlumberger; Shouxiang Mark Ma, Saudi Aramco

SPWLA-2021-0034
INTERPRETATION OF MULTI-FREQUENCY DIELECTRIC PERMITTIVITY MEASUREMENTS FOR ASSESSMENT OF WATER SATURATION IN CARBONATE FORMATIONS WITH COMPLEX PORE STRUCTURE
Zulkuf Azizoglu and Zoya Heidari, The University of Texas at Austin

SPWLA-2021-0035
MODEL-BASED CORRECTION FOR DIP AND SHOULDER BED EFFECTS ON LWD PROPAGATION DIELECTRIC CONSTANT AND RESISTIVITY LOGS
Gong Li Wang, Dean Homan, Ping Zhang and Wael Abdallah, Schlumberger; Shouxiang Ma, Saudi Aramco

Session 6B – Machine Learning – I

SPWLA-2021-0036
DATA QUALITY CONSIDERATIONS FOR PETROPHYSICAL MACHINE LEARNING MODELS
Andrew McDonald, Lloyd’s Register
Session 7A – Ultra-Deep Resistivity

SPWLA-2021-0037  FACES CLASSIFICATION OF A COMPLEX RESERVOIR USING MACHINE LEARNING: CASE STUDY FROM VOLCANIC FORMATION, THE YURIHARA OIL FIELD, JAPAN
Yuki Maehara, Schlumberger; Takeaki Otani and Tetsuya Yamamoto, Japan Petroleum Exploration Co., Ltd.

SPWLA-2021-0038  EFFICIENT PETROPHYSICAL UNCERTAINTY PROPAGATION VIA DATA-DRIVEN ANALYTICS
Carlo Cristiano Stabile and Marco Pirrone, ENI S.p.A.

SPWLA-2021-0039  DETECTION OF OFFSET WELLS AHEAD OF AND AROUND AN LWD ULTRA-DEEP ELECTROMAGNETIC TOOL
Nigel Clegg, Alban Duriez, Vladimir Kiselev and Supriya Sinha and Tim Parker, Halliburton; Fredrik Jakobsen and Erik Jakobsen, Aker BP; David Marchant and Christoph Schwarzbach, Computational Geosciences Inc.

SPWLA-2021-0040  TOWARD THREE-DIMENSIONAL RESERVOIR MAPPING – A NEW APPROACH FOR MAPPING RESERVOIRS WITH ADVANCED ULTRA-DEEP AZIMUTHAL RESISTIVITY MEASUREMENTS
Haifeng Wang, Michael Thiel, Jean-Michel Denichou, Diogo Salim, Soazig Leveque, and Vera Krissetiawati Wibowo, Schlumberger; Chris Woods and Darren Baker, Woodside Energy Ltd.

SPWLA-2021-0041  REAL-TIME 3D IMAGING OF COMPLEX TURBIDITIC RESERVOIR ARCHITECTURE
Supriya Sinha, Karol Riofrio, Arthur Walmsley and Nigel Clegg, Halliburton; Stig Sviland-Østre and Nicolas Gueze, Aker BP

Session 7B – Case Studies - I

SPWLA-2021-0042  X-RAY DIFFRACTION, X-RAY FLUORESCENCE, AND NEUTRON INDUCED SPECTROSCOPY BASED CORRECTION TO IVAR AASEN GEOMODEL: AN OILFIELD FROM THE NORWEGIAN NORTH SEA
Egil Romstås Fjeldberg, Yngve Bolstad Johansen, Lodve Hugo Olsborg, Geir Frode Kvliaas, and Tor-Ole Jøssund, Aker BP; Harish Datir, Schlumberger

SPWLA-2021-0043  INTEGRATED EVALUATION OF LAMINATED SAND-SHALE GAS-BEARING RESERVOIR USING TENSOR MODEL: A CASE STUDY COMBINING DATA FROM TRIAXIAL RESISTIVITY, IMAGE, SONIC, AND RESERVOIR TESTING IN B-FIELD, MALAYSIA
Aditya Arie Wijaya, Ivan Zhiai Ming Wu, Sarvagya Parashar and Mohammad Iffwad, Halliburton; Amirul Afiq B Yaakob, William Amelio Tolioe, Adib Akmal Che Sidid and Nadhirah Bt. Ahmad, Petronas Carigali

SPWLA-2021-0044  AN INTEGRATED PETROPHYSICAL CHARACTERIZATION OF A SILICICLASTIC TIGHT GAS RESERVOIRS IN NEUQUÉN BASIN, WESTERN ARGENTINA
Nicolas Carrizo and Emiliano Santiago, YPF S.A. and Universidad Nacional del Comahue; Pablo Saldungaray, Schlumberger

Session 8A – Case Hole Logging - I

SPWLA-2021-0045  THROUGH-TUBING CASING DEFORMATION AND TUBING ECCENTRICITY IMAGE TOOL FOR WELL INTEGRITY MONITORING AND PLUG-ABANDONMENT
Qinshan Yang, Kuang Qin, Jeff Olson and Marvin Rourke, GOWell International

SPWLA-2021-0046  IDENTIFICATION OF BREAKOUT BEHIND CASING: METHODOLOGY TO OBTAIN OPENHOLE EQUIVALENT CALIPER MEASUREMENTS THROUGH SLOTTED LINER USING THE DENSITY TOOL
Laurent Mosse, Schlumberger; Stephen Pell, Santos Ltd. and Thomas Neville, Asia-Pacific Formation Evaluation Services Pty Ltd

SPWLA-2021-0047  A NOVEL THROUGH-CASING CORRECTION ALGORITHM FOR A 4-DETECTOR GAMMA DENSITY TOOL
Ya Jin* and Shang Jie, Lin Huang, Zenghui Yu and Min Li, China Oilfield Services Limited; Chen ZengHai, CNOOC China Limited Pengbo Operating Company; Yulian Li*, Wei Tang, Yating Hu, Lvlin Lin, Qinzhong Zhang and Qiong Zhang, University of Electronic Science and Technology of China (Ya Jin* and Yulian Li* are co-first authors)

Session 8B – Borehole Imaging - II

SPWLA-2021-0048  A NEW PSEUDO-VELOCITY-BASED METHOD TO MITIGATE LWD IMAGE INTERPRETATION RISKS
Tianhua Zhang, Shiduo Yang, Chandramani Shrivastava, Adrian A and Nadege Bize-Forest, Schlumberger

SPWLA-2021-0049  EVALUATION OF LWD HIGH RESOLUTION ULTRASONIC IMAGING TECHNOLOGY AND APPLICATIONS IN
SLIM HOLE SIZE
Mohamed M. Hashem, Saudi Aramco; Ahmed Taher, Mohamed Fouda and Rehab Al-Khalifah, Halliburton

ASSESSMENT OF NEW HIGH-DEFINITION BOREHOLE IMAGING-WHILE-DRILLING TECHNOLOGY: LEARNINGS FROM PRE-SALT CARBONATES OF BRAZIL
Nicolas Orban, Shashank Garg and Mikhail Shaldaev, TOTAL; Chandramani Shrivastava, Guillermo Cuadros, Victor Marquinez, Adrian A, Vera Wibowo and Ricardo Domingos, Schlumberger

Session 9A – Petrophysics

RESERVOIR SCALE CHEMOSTRATIGRAPHY AND FACES MODELING USING HIGH SAMPLE RATE GEOPHYSICAL SCANS OF WHOLE CORE
John J. Degenhart, Jr., Saifdar Ali, Mansoor Ali, Brian Chin and W. D. Von Gonten, Jr., W. D. Von Gonten Laboratories and Eric Peavey, Shell Fellow-UROC and Dept. of Geology & Geophysics, Texas A&M University

ENHANCED ASSESSMENT OF FLUID SATURATION IN THE WOLFCAMP FORMATION OF THE PERMIAN BASIN
Sabyasachi Dash and Zoya Heidari, The University of Texas at Austin

WELL-TEST LOGGING TO ENDEAVOR MAPPING THE CARBONATES PERMEABILITY, OFFSHORE ABU DHABI
Antoine Jacques and Vincent Jaffrezic, TOTAL SE; Benoit Brouard, BROUARD Consulting; Shafiq Ahmed, Amr Mohamed Serry, Raymond Nguyen and Yann Bigno, ADNOC Off Shore

Session 9B – Case Studies – II

ACQUISITION, ANALYSIS, AND INTEGRATION OF WELLBORE LOGS TO CHARACTERIZE A FRACTURED GEOTHERMAL RESERVOIR: THE CASE OF RITTERSHOFFEN, FRANCE
Giovanni Sosio, Andreia Mandiuc and Annalisa Campana, Schlumberger; Jeanne Vidal, Universidad de Chile; Régis Hehn, GéoPlusEnvironnement; Clément Baujard, ÉS Géothermie

3D PETROPHYSICS FOR HAWE: CASE STUDIES
Alexander Kolomytsev, GazpromNeft; and Yulia Pronyaeva, Schlumberger

STRESS MEASUREMENT CAMPAIGN IN SCIENTIFIC DEEP BOREHOLES: FOCUS ON TOOL AND METHODS
Jean Desroches, Rocks Expert; Emilie Peyret, Adriaan Gisolf, Ailsa Wilcox, Mauro Di Giovanni and Aernout Schram de Jong, Schlumberger; Siavash Sepehri, Independent; Rodney Garrard and Silvio Giger, Nagra

Session 10A – Acoustics - I

ENHANCING THE RESERVOIR PERFORMANCE BY ACCESSING THE RESERVOIR SWEET SPOTS GUIDED BY FAR-FIELD SONIC IMAGING: AN INTEGRATED CASE STUDY FROM THE NORWEGIAN NORTH SEA
Harish Datir, Schlumberger; Knut Arne Birkedal, Aker BP; Sachin Kriplani and Hege Porten, Schlumberger; Nils Andre Aarseth, Aker BP

ULTRASONIC ANGLE-DEPENDENT REFLECTIVITY IN COMPLEX ROCKS FOR IMPROVED INTERPRETATION OF SONIC AND ULTRASONIC LOGS
Daria Olszowska, Gabriel Gallardo-Giozio and Carlos Torres-Verdín, The University of Texas at Austin

AUTOMATIC LOGGING-WHILE-DRILLING DIPOLE SONIC SHEAR PROCESSING ENABLED BY PHYSICS-DRIVEN MACHINE LEARNING
Lin Liang, Ting Lei and Matthew Blyth, Schlumberger

CHARACTERIZING CEMENT BOND QUALITY USING SLIP-INTERFACE THEORY AND COUPLING STIFFNESS
Xuelian Chen, Xiaoming Tang, Shengqing Li and Yuanda Su, China University of Petroleum

Session 10B – Conventional Reservoirs – II

USING HIGH FIDELITY CONTINUOUS CORE DATA FOR A FAST AND OBJECTIVE ESTIMATION OF RESERVOIR QUALITY
Izral Izaruddin Marzuki and Thanapala Murugesu, Petronas; Christophe Germay, Tanguy Lhomme and Luc Perneder, EPSLOG
SPWLA-2021-0062 LEARNINGS FROM SPECTRAL GR MEASUREMENTS FROM LWD AND FROM CUTTINGS IN HIGH AND LOW ANGLE WELLS
Mohamed Azizi Ibrahim and Faisal Al-Enezi, Saudi Aramco; Marie Van Steene and Alan Fernandes, Schlumberger

SPWLA-2021-0063 FROM PLUG MEASUREMENTS TO DYNAMIC SIMULATIONS: UPSCALING EFFECTS ON MODELED HYDROCARBON VOLUMES
Iulian N. Hulea, Shell Global Solutions International B.V.

SPWLA-2021-0064 AUTOMATIC FLOW-CALIBRATED PERMEABILITY LOG ESTIMATION THROUGH DUAL RANDOM FOREST ALGORITHM: HOW PREDICTIVE ANALYTICS ENHANCES THE CHARACTERIZATION OF HETEROGENEOUS CARBONATE RESERVOIRS
Federica Di Maggio, Giulia Barbacini, Nicola Raimondi Cominesi, Dario Reolone, Marco Pirrone, ENI S.p.A

Session 11A – Case Hole Logging - II

SPWLA-2021-0065 A NOVEL METHOD FOR FORMATION DENSITY MEASUREMENT IN CASED WELLS
Xinguang Wang, China University of Petroleum (East China); Dong Li, China Oilfield Services Limited; Lei Zhang, China National Offshore Oil Corporation International Limited; Feng Zhang and Wenhao Wang, China University of Petroleum (East China); Hui Gao, Xi’an HuiNeng Electronic Equipment Co. LTD

SPWLA-2021-0066 THEORETICAL METHOD AND EXPERIMENTAL RESEARCH ON HIGH PRECISION FOUR DETECTOR DENSITY LOGGING
Shanqing Cai, Juntao Liu, Lanzhou University; Xusheng Wang, Fudan University and Zhiyi Liu, Lanzhou University

SPWLA-2021-0067 DETERMINING THE DENSITY OF MULTIPLE LAYERS USING GAMMA SPECTROSCOPY
Mayir Mamtimin and Jeffrey Crawford, Halliburton

Session 11B – Machine Learning - II

SPWLA-2021-0068 THE APPLICATION OF PATTERN RECOGNITION AND MACHINE LEARNING TO DETERMINE CEMENT CHANNELING & BOND QUALITY FROM AZIMUTHAL CEMENT BOND LOGS
Andrew Imrie, Halliburton

SPWLA-2021-0069 ENHANCED MINERAL QUANTIFICATION AND UNCERTAINTY ANALYSIS FROM DOWNHOLE SPECTROSCOPY LOGS USING VARIATIONAL AUTOENCODERS
Paul Craddock, Prakhar Srivastava, Schlumberger-Doll Research Center; Harish Datir, David Rose, Tong Zhou, Laurent Mosse and Lalitha Venkataraman, Schlumberger

SPWLA-2021-0070 NOVEL METHODOLOGY FOR AUTOMATION OF BAD WELL LOG DATA IDENTIFICATION AND REPAIR
Ryan Banas, PetroRes Consulting; Andrew McDonald and Tegwyn J. Perkins, Lloyd’s Register

Session 12A – Formation Evaluation

SPWLA-2021-0071 ANALYTICAL UNCERTAINTY PROPAGATION IN FACIES CLASSIFICATION WITH UNCERTAIN LOG-DATA
Fabio Ciabarri, Marco Pirrone and Cristiano Tarchiani, Eni S.p.A

SPWLA-2021-0072 APPLICATION OF IMAGE LOGS FOR ENHANCED RESISTIVITY-BASED WATER SATURATION ASSESSMENT IN ORGANIC-RICH MUDROCKS
Sabyasachi Dash and Zoya Heidari, The University of Texas at Austin

SPWLA-2021-0073 GAMMA RAY INDEX–SHALE VOLUME TRANSFORMS
David Kennedy, QED Petrophysics LLC

Session 12B – Unconventional Reservoirs - I

SPWLA-2021-0074 RV/RH ANISOTROPY IN UNCONVENTIONAL FORMATIONS: RESOLVING THE RIDDLE OF RESISTIVITY
Andrew Barry and Adam Haecker, Continental Resources Inc. and Siddharth Misra, Texas A&M University

SPWLA-2021-0075 EVALUATION OF RELATIVE PERMEABILITY OF A TIGHT OIL FORMATION IN DAQING OILFIELD
D. Leslie Zhang, CNPC USA Corp.; Chunyan Qi, Beijing Huamei Century International Technology Co.; Xiaodong Shi, Jianfei Zhan and Xue Han, Exploration and Development Research Institute of Daqing Oilfield Company Ltd.; Xiangyun Li, Beijing Huamei Century International Technology Co., Ltd.; Ze Wang and Baojun Bai, Missouri University of Science and Technology

**SPWLA-2021-0076**

MACRO-PORE HYDROCARBON SATURATION FROM NMR $T_1$ - $T_2$ MAPS IN THE UNCONVENTIONAL POINT-PLEASANT FORMATION

Xinglin Wang, Philip M. Singer, Zeliang Chen, Yunke Liu and George J. Hirasaki, Rice University; Zheng (Elton) Yang, Scott J. Seltzer, Boqin Sun, Marcus O. Wigand and Jon E. Burger, Chevron Technical Center

**Session 13A – Geochemistry**

**SPWLA-2021-0077**

INTEGRATING A NOVEL CHLORINE MEASUREMENT WITH RESISTIVITY, DIELECTRIC DISPERSION, AND 2D NMR TO RESOLVE SALINITY AMBIGUITY: CASE STUDIES IN ORGANIC SHALE FORMATIONS

Andrew C. Johnson, Jeffrey Miles, Laurent Mosse, Robert Laronga, Violeta Lujan, Niranjan Aryal and Dozie Nwosu, Schlumberger

**SPWLA-2021-0078**

REVISITING THE INTERPRETATION OF COMPLEX CARBONATE RESERVOIRS WITH THE USE OF NOVEL ADVANCED LOGS INTEGRATION TECHNIQUES

Harish B. Datir and Laurent Mosse, Schlumberger and Terje Kollien, Lundin Energy Norway

**SPWLA-2021-0079**

A GEOCHEMISTRY-ORIENTED WORKFLOW FOR WETTABILITY ASSESSMENT AT RESERVOIR CONDITION USING MOLECULAR DYNAMICS SIMULATIONS

Isla Silveira de Araujo, Archana Jagadisan and Zoya Heidari, The University of Texas at Austin

**Session 13B – Borehole Imaging – II**

**SPWLA-2021-0080**

INVERSION-BASED MEASUREMENT INTERPRETATION OF A NEW THROUGH-THE-BIT OBM PHOTOREALISTIC BOREHOLE IMAGER

Yong-Hua Chen, Richard Bloemenkamp, Peter Schlicht, Lin Liang and Laetitia Comparon, Schlumberger

**SPWLA-2021-0081**

AN AI-BASED APPROACH TO ENHANCED FRACTURE RESOLUTION IN IMAGE LOGS

James Howard, Joe Tracey, Mike Shen and Shawn Zhang, DigiM Solution LLC

**SPWLA-2021-0082**

DEEP-LEARNING-BASED AUTOMATED SEDIMENTARY GEOMETRY CHARACTERIZATION FROM BOREHOLE IMAGES

Marie Lefranc, Zikri Bayraktar, Morten Kristensen, Hedi Driss, Isabelle Le Nir, Philippe Marza and Josselin Kherroubi, Schlumberger

**Session 14A – Case Studies – III**

**SPWLA-2021-0083**

MULTISCALE LOGGING WHILE DRILLING DATA INTEGRATION UNVEILED COMPLEX GEOLOGICAL SCENARIO WHILE GEOSTEERING

Maurizio Mele, Filippo Chinellato, Andrea Leone and Francesca Arata, Eni S.p.A.; Caterina Cappanneli, and Matteo Medaglia, Mizamtec Operating Co. S. de R.L. de C.V.

**SPWLA-2021-0084**

IDENTIFICATION OF NATURAL OPEN FRACTURES, INDUCED FRACTURES AND MATRIX PERMEABILITY IN CARBONATES WHILE DRILLING

Jalal Dashi, Bader Al-Ajmi and Hawas Farwan, Kuwait Oil Company; Ahmad Shoeibi, Milton Sanclemente, Alberto Martocchi and Eliana R. Russo, Geolog International B.V.

**SPWLA-2021-0085**

INTERPRETATION OF LWD ACOUSTIC BOREHOLE IMAGE LOGS: CASE STUDIES FROM NORTH AMERICAN SHALE PLAYS

Bo Gong, Ela Manuel, Youfang Liu, David Forand, Tom Malizia, Vahid Tohidi and Alex Saldana, Chevron

**Session 14B – Conventional Reservoirs – III**

**SPWLA-2021-0086**

FORMATION PRESSURE ESTIMATION IN ULTRA-LOW PERMEABLE RESERVOIRS EMPLOYING FORMATION RATE ANALYSIS (FRA) AND ARTIFICIAL INTELLIGENCE CONTROLLED TOOLS

Yamal Askoul and Gavin JG Sibbald, Baker Hughes; Art Hooker and John Banks, TOTAL E&P UK LTD

**SPWLA-2021-0087**

ANISOTROPY QUANTIFICATION USING HIGH-RESOLUTION WHOLE-CORE CT-SCAN IMAGES

Andres Gonzalez, Mehdi Teymouri and Zoya Heidari, The University of Texas at Austin; Olivier Lopez,
**Session 15A – Machine Learning – III**

**SPWLA-2021-0089**
PREDICTION AND ANALYSIS OF GEOMECHANICAL PROPERTIES OF JIMUSAER SHALE USING A MACHINE LEARNING APPROACH  
Lianteng Song*, Zhonghua Liu, Chaoliu Li, Congqian Ning, China National Petroleum Corporation; Yating Hu*, Yan Wang, Feng Hong, Wei Tang, Yan Zhuang, Ruichang Zhang, Yanru Zhang, Qiong Zhang, University of Electronic Science and Technology of China (*Lianteng Song and Yating Hu are co-first authors)

**SPWLA-2021-0090**
MACHINE LEARNING FOR PRODUCTIVITY PREDICTION IN HETEROGENEOUS CARBONATE GAS RESERVOIRS, CENTRAL SICHUAN BASIN, CHINA  
Zuoan Zhao, PetroChina SWOGC; Dali Wang, Schlumberger

**SPWLA-2021-0091**
AUTOMATED SELECTION OF INPUTS FOR LOG PREDICTION MODELS USING A NEW FEATURE SELECTION METHOD  
Ravi Arkalgud, Hello Flare Ltd; Andrew McDonald and Ross Brackenridge, Lloyd’s Register

**SPWLA-2021-0092**
AUTO-NAVIGATION ON PRESSURE AND SAMPLING LOCATION IN WIRELINE AND LWD: BIG DATA CHALLENGES AND SOLUTIONS  

**Session 15B – Nuclear Magnetic Resonance**

**SPWLA-2021-0093**
RELIABLE QUANTIFICATION OF PORE GEOMETRY IN CARBONATE ROCKS USING NMR AND ELECTRICAL RESISTIVITY MEASUREMENTS FOR ENHANCED ASSESSMENT OF PERMEABILITY AND CAPILLARY PRESSURE  
Zulkuf Azizoglu, Artur Posenato Garcia and Zoya Heidari, The University of Texas at Austin

**SPWLA-2021-0094**
MEASURING KEROGEN, SOLID ORGANICS, AND OIL PRODUCTION POTENTIALS OF UNCONVENTIONAL SOURCE ROCKS USING SOLID TYPE 20-MHZ NMR TECHNIQUES  
Z. Harry Xie, Thomas Gentzis and Humberto Carvajal-Ortiz, Core Laboratories, LP

**SPWLA-2021-0095**
NMR DRILL CUTTING ANALYSIS: METHODOLOGY EVALUATION AND OPERATIONAL BEST PRACTICES  
Gabriela Singer, Mark Flaum and Songhua Chen, Halliburton; S. Mark Ma, Saudi Aramco

**SPWLA-2021-0096**
NMR WETTABILITY INDEX MEASUREMENTS AND METHODS COMPARED ON A VARIETY OF UNCONVENTIONAL SAMPLES  
Shaina Kelly and Ron J.M. Bonnie, ConocoPhillips Company; Micheal J. Dick and Dragan Veselinovic, Green Imaging Technologies

**Session 16A – Pulsed Neutron Logging**

**SPWLA-2021-0097**
DETERMINATION OF RESIDUAL OIL SATURATION IN A WATER AND GAS FLOODED GIANT OIL RESERVOIR USING CORE, CONVENTIONAL AND PULSED NEUTRON LOGS  
Mike Davenport, Rufat Guliyev, Kasim Sadikoglu, Pavel Gramin and Adrian Zett, BP Exploration Operating Company

**SPWLA-2021-0098**
DERIVING SYNTHETIC BULK DENSITY USING FAST NEUTRON CROSS-SECTION IN A LOG-INTEGRATED APPROACH FROM SLIM PULSED NEUTRON LOGGING IN CASED-HOLE ENVIRONMENT  
Khaled Saleh, Aly Morad, Chiara Cavalleri, Schlumberger; Emad Abdel Hakim, Mohamed Farouk, Eslam Atwa, Mohamed Ameen, Youssif Youssif, Kareem Mamdouh, General Petroleum Company

**SPWLA-2021-0099**
AN ENHANCED METHOD FOR CRACK EVALUATION UTILIZING NEUTRON GAMMA TRACER IMAGING LOGGING TECHNOLOGY IN CARBONATE RESERVOIR  
Qian Chen, Feng Zhang, Lili Tian and Xiaoyang Zhang, China University of Petroleum (East China); Xianghui Li, Isotope Research Institute of Henan Academy of Sciences Co.Ltd; Qunwei Fang and Junting Fan, China University of Petroleum (East China)
Session 16B — Acoustics — II

SPWLA-2021-0100 INTRODUCING SONIC IMAGING WITH A SLIM-DIPHOLE MEASUREMENT IN HIGH-ANGLE WELLS
Olusegun Akinyose and Rima Ali, Saudi Aramco; Rajeev Kumar and J. Adam Donald, Schlumberger

SPWLA-2021-0101 ENHANCING WELLBORE LEAK LOCALIZATION WITH CONTINUOUS LOGGING DATA FROM A SONIC SENSOR ARRAY
Yao Ge, Yadong Wang, Xiang Wu, Ruijia Wang and Freeman Hill, Halliburton

SPWLA-2021-0102 ROBUST SONIC LOG TRACKING USING A MULTI-RESOLUTION APPROACH
Ting Lei, Michiko Hamada, Adam Donald and Takeshi Endo, Schlumberger

Session 17A — Geosteering

SPWLA-2021-0103 VENDOR-NEUTRAL STOCHASTIC INVERSION OF LWD DEEP AZIMUTHAL RESISTIVITY DATA AS A STEP TOWARD EFFICIENCY STANDARDIZATION OF GEOSTEERING SERVICES
Mikhail Sviridov, Anton Mosin, Sergey Lebedev, ROGII Inc. and Ron Thompson, Beach Energy Limited

SPWLA-2021-0104 REAL-TIME 2.5D INVERSION OF LWD RESISTIVITY MEASUREMENTS USING DEEP LEARNING FOR GEOSTEERING APPLICATIONS ACROSS FAULTED FORMATIONS
Kyubo Noh and Carlos Torres-Verdín, The University of Texas at Austin; David Pardo, UPV/EHU, BCAM, Ikerbasque

SPWLA-2021-0105 REAL-TIME ENSEMBLE-BASED WELL-LOG INTERPRETATION FOR GEOSTEERING
Nazanin Jahani, NORCE Norwegian Research Centre; Joaquín Ambía, The University of Texas at Austin; Kristian Fossum, Sergey Alyaev and Erich Suter, NORCE Norwegian Research Centre and Carlos Torres-Verdín, The University of Texas at Austin

Session 17B — Completion Petrophysics and Reservoir Surveillance

SPWLA-2021-0106 LESSONS LEARNED FROM CROSS-VALIDATION OF FIBER OPTICS AND PRODUCTION LOGGING CLUSTER PERFORMANCE ASSESSMENT IN THE UNCONVENTIONAL WELLS
Yegor Se, Chevron ETC; Michael Sullivan, Vahid Tohidi, Michael Lazorek and, Chevron Canada; Ahmed Attia, Phillip Chen, Ziebel US; Linda Abbassi, Virginie Schoepf, Openfield Technology

SPWLA-2021-0107 FIELDWIDE DYNAMIC PRESSURE SURVEILLANCE WITH FPWD TECHNOLOGY
Yon Blanco, Schlumberger; Ben Fletcher and Robert Webber, CNOOC International; Alistair Maguire and Velerian Lopes, Schlumberger

11:45 SPWLA-2021-0108 CASE STUDIES ON MULTI-STRING ISOLATION EVALUATION IN P&A OPERATIONS
Jun Zhang, Probe; Dan T. Mueller, ConocoPhillips Company; David Bryce, Probe; Tom A. Brockway, ConocoPhillips Company and Fady Iskander, Probe

Session 18A — Conventional Reservoirs — IV

SPWLA-2021-0117 APPLICATION OF LWD ACOUSTIC DISPERSIVE DATA PROCESSING FOR HIGH-QUALITY SHEAR SLOWNESS Logs IN SLOW FORMATIONS
Ruijia Wang, Jiajun Zhao and Taher kortam, Halliburton

SPWLA-2021-0118 SATURATION EXPONENT AS A FUNCTION OF RESERVOIR HETEROGENEITY AND WETTABILITY IN THE TAMBAREDJO OIL FIELD, SURINAME
Elias R. Acosta, Dunia Technology Solutions; Bhagwanpersad Nandial, Staatsolie Maatschappij and Ryan Harripersad, Former Petrophysics Trainee at Staatsolie Maatschappij

SPWLA-2021-0119 A NEW LOOK AT THE DUAL DEPTH OF INVESTIGATION OF LWD PROPAGATION RESISTIVITY LOGGING
Gong Li Wang, Dean Homan, David Maggs and David Allen, Schlumberger

Session 18B — Formation Fluid Analysis — III

SPWLA-2021-0112 COMPRESSION SENSING BASED OPTICAL SPECTROMETER FOR DOWNHOLE FLUID ANALYSIS
Bin Dai, Christopher Jones, Jimmy Price, Darren Gascooke and Anthony van Zuilekom, Halliburton
AUTOMATED WORKFLOW TO INDICATE RESERVOIR CONNECTIVITY THROUGH ASPHALTENE EQUILIBRIUM
Melanie Jensen, Lalitha Venkataramanan, Li Chen, Sandip Bose, Peter Tilke and Oliver C. Mullins, Schlumberger

USING PROXY SIMULATOR FOR RESERVOIR ZONE SELECTION AND REDUCING THE FORMATION TESTER CLEANUP OPERATIONAL TIME
Andre C. Bertolini, Vanessa Simoes, Marianna Dantas and Patrick Pereira Machado, Schlumberger

Session 19A – Unconventional Reservoirs – II

AN ACCURATELY DETERMINING POROSITY METHOD FROM PULSED-NEUTRON ELEMENT LOGGING IN UNCONVENTIONAL RESERVOIRS
Feng Zhang, Fei Qiu, Qunwei Fang, Xiaoyang Zhang, Hui Zhang, Fangwei Tang and Jilin Fan, China University Of Petroleum (East China)

A COUPLED PETROPHYSICAL AND GEOMECHANICAL WORKFLOW TO INTERPRET DIPOLE SONIC VELOCITIES FOR IN-SITU STRESS
Tom Bratton, Tom Bratton LLC

Session 19B – Case Studies – IV

RAPID CROSS- PLOT DISCRIMINATION OF COMMERCIAL POTASH MINERALIZATION – CASE HistORIES
Donald G. Hill, Consulting Petrophysicist and E.R. Crain, Petrophysical Advisor and Mentor

PETROPHYSICS SKILL SET GUIDELINES FOR INDEPENDENT PETROPHYSICAL CONTRIBUTORS
Z. Zach Liu and S. Mark Ma, SPWLA Education SIG