

Third International Meeting for Applied Geoscience & Energy (IMAGE 2023)

Houston, Texas, USA
28 August – 1 September 2023

Volume 1 of 3

ISBN: 978-1-7138-9507-7

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2023) by Society of Exploration Geophysicists
All rights reserved.

Printed with permission by Curran Associates, Inc. (2024)

For permission requests, please contact Society of Exploration Geophysicists
at the address below.

Society of Exploration Geophysicists
10300 Town Park Dr.
Suite SE 1000
Houston, Texas, USA
77072

Phone: (918) 497-5500
Fax: (918) 497-5557

www.seg.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

VOLUME 1

BROADBAND SEISMIC PROBABILISTIC AVO INVERSION FOR RESERVOIR PROPERTIES.....	1
<i>K. Li, Q. Zheng, X. Yin, Y. Yang</i>	
A FIELD DATA APPLICATION OF ROCKAVO: DATA-DRIVEN, DIRECT PETROPHYSICAL INVERSION OF PRE-STACK SEISMIC DATA	6
<i>M. Corrales, H. Hoteit, M. Ravasi</i>	
DIFFRACTION AMPLITUDES AS A QUANTITATIVE FRACTURE PROPERTY INTERPRETATION TOOL	11
<i>D. Adams, C. Barajas-Olalde, T. Richards, B. Kurz</i>	
ELASTIC IMPEDANCE PARAMETERIZATION AND INVERSION FOR FRACTURE QUASI-WEAKNESSES AND QUASI- THOMSEN PARAMETERS IN FRACTURED RESERVOIRS WITH MONOCLINIC SYMMETRY	16
<i>W. Xiang, X. Yin, K. Li, Z. Ma</i>	
A DECOUPLED ORTHOTROPIC ANISOTROPY MODELING METHOD AND ITS APPLICATION	21
<i>W. Lei, L. Jiandong, X. Ruiqing, L. Daoshan, Z. Jinping, H. Xiaoguang</i>	
CONVOLUTION MODEL THEORY-BASED INTELLIGENT AVO INVERSION METHOD FOR VTI MEDIA.....	26
<i>Y. Sun, Y. Liu, H. Dong</i>	
ESTIMATION OF RESERVOIR PROPERTIES USING A PRE-STACK SEISMIC PROBABILISTIC INVERSION IN GAS-BEARING TIGHT SANDSTONE RESERVOIRS.....	31
<i>Y. Zeng, Z. Zong, K. Li</i>	
SEMI-QUANTITATIVE PREDICTION OF HYDROCARBON GAS SATURATION IN CARBON DIOXIDE ENRICHMENT AREAS IN THE SOUTH CHINA SEA DEEPWATER	36
<i>L. Xu, W. Zhang, X. Liu, H. Liu, J. Yang, Y. Ma</i>	
EXACT KINEMATIC BEHAVIOR OF THE P-SV CONVERTED WAVE IN A VERTICAL TRANSVERSELY ISOTROPIC MEDIUM	41
<i>G. Cambois</i>	
INVMIXER, AN EFFICIENT DEEP NEURAL NETWORK FOR SEISMIC INVERSION	46
<i>T. Zhang, M. Araya-Polo, A. Shrivastava</i>	
SYNTHETIC-DATA-DRIVEN DEEP LEARNING METHOD FOR ELASTIC PARAMETER INVERSION	50
<i>S. Sun, L. Zhao, H. Chen, Z. He, J. Geng</i>	
AVAZ INVERSION FOR BRITTLENESS INDICATOR AND FRACTURE PARAMETERS OF GAS-BEARING RESERVOIRS WITH TILTED TRANSVERSE ISOTROPY	55
<i>Y. Tan, G. Zhang, Z. Ma, Y. Lin</i>	

ROBUST MULTI-CHANNEL PRE-STACK AVA INVERSION BASED ON ELASTIC L1/2 NORM..... <i>N. Lan</i>	60
APPLICATION OF SHEAR-WAVE SEISMIC INTERPRETATION TECHNOLOGY IN SHALLOW GAS CLOUDS AREA	65
<i>W. Yan, D. Zhiwen, C. Zhigang, C. Yintao, Z. Rui, X. Xiaoyu, W. Dan</i>	
DAMPED LEAST SQUARES BASED DETERMINISTIC PP WAVE AND SH-SH WAVE JOINT INVERSION METHOD	69
<i>Y. Lin, G. Zhang, B. Wang, S. Chen, M. Huang</i>	
PP-PS DEPTH-DOMAIN AVA INVERSION.....	74
<i>M. Cavalca, R. Fletcher</i>	
ULTRASONIC MEASUREMENTS OF ELASTIC ANISOTROPY OF GRANITIC ROCKS FOR ENHANCED GEOTHERMAL RESERVOIRS	79
<i>M. Carrasquilla, J. Parsons, T. Long, M. Sun, Y. Zheng, D. Han</i>	
OPTIMIZED CHARACTERIZATION WORKFLOW FOR NATURALLY FRACTURED RESERVOIRS USING SEISMIC ANISOTROPY ATTRIBUTES IN THE MIDDLE MAGDALENA VALLEY BASIN, COLOMBIA	84
<i>O. Moreno, E. Casana, L. Figuera, I. Higuera, D. Garcia, J. Acosta, B. Roure</i>	
ACOUSTIC IMPEDANCE MULTI-CHANNEL INVERSION CONSTRAINED BY SPATIAL REFLECTION FEATURES	89
<i>Y. Yang, X. Yin, K. Li</i>	
COMPARISON OF THREE BAYESIAN METHODS FOR LITHOFLUID FACIES PREDICTION USING ELASTIC PROPERTIES	94
<i>J. Zhang, K. Wolf, A. Yusifov, M. Walker, P. Paramo, J. Winterbourne, R. Biswas, A. Roy, Q. Liu, X. Liu</i>	
STOCHASTIC INVERSION METHOD BASED ON A PRIORI INFORMATION OF COMPRESSION-SENSING DIVIDED FREQUENCY WAVEFORM INDICATION.....	99
<i>Y. Lin, S. Chen, G. Zhang, B. Wang, M. Huang</i>	
A FREQUENCY-DEPENDENT FLUID PREDICTION METHOD BASED ON A NOVEL FLUID INDICATOR INCORPORATING ANISOTROPIC EFFECT AND SQUIRT FLOW.....	104
<i>T. Lan, Z. Zong</i>	
DEEP DIX: ENHANCING INTERVAL VELOCITY MODEL ESTIMATION THROUGH ADVERSARIAL REGULARIZATION.....	108
<i>J. Stitt, R. Clapp, B. Biondi</i>	
ESTIMATION OF OCEAN-WATER TEMPERATURE AND SALINITY FROM MARINE SEISMIC DATA FOR WEATHERPREDICTION AND CLIMATE-MODELING	113
<i>D. Chakraborty, J. Correa, M. De Faria, E. Oladeji, S. Mallick</i>	
SIMULTANEOUS INVERSION OF TIGHT-SANDSTONE RESERVOIR FLUID AND BRITTLENESS INDEX BASED ON FREQUENCY-DEPENDENT AVO	118
<i>T. Lan, Z. Zong</i>	
GEOSTATISTICAL INVERSION METHOD BASED ON SEISMIC WAVEFORM SIMILARITY	122
<i>X. Ni, J. Zhang, G. Zhang, B. Wang, Y. Lin, Z. Liu</i>	

MULTICHANNEL SEISMIC DECONVOLUTION VIA 2D K-SVD AND CONVOLUTIONAL SPARSE CODING	127
<i>G. Zhang, X. Gao, B. Zou, Y. Wang, Y. Chen</i>	
SPATIALLY VARYING CHI VOLUMES: A STUDY IN OFFSHORE AUSTRALIA ON BACKGROUND TREND CALCULATION FROM THE SHUEY TWO-TERM APPROXIMATION	132
<i>H. Powers, N. Vento</i>	
SV/SH OR S1/S2 SEPARATION FOR 3D6C DATA WITH DIRECT S-WAVE VIBRATOR EXCITING ONCE	137
<i>Y. Yue, Z. Deng, W. Zhang, H. Li, J. Zhang, L. Huo</i>	
BROADBAND DATA WITH A NEW LOW FREQUENCY SOURCE — ACQUISITION AND PROCESSING EXAMPLE FROM THE GULF OF MEXICO	142
<i>X. Shang, M. Kryvohuz, H. Macintyre, G. Baeten, T. Allemand, P. Herrmann, S. Laroche, S. Ronen</i>	
GEMINI: A FULLY OPERATIONAL BROADBAND SOURCE FOR MODEL BUILDING AND IMAGING	147
<i>C. Udengaard, D. Brookes, H. Flores</i>	
SIMULTANEOUS-SOURCE WIDE-AZIMUTH SEISMIC ACQUISITION USING LOW FREQUENCY GEMINI SOURCE IN EASTERN MEDITERRANEAN SEA.....	152
<i>S. Ou, S. Zaragoza, Z. Lawrence, L. Donaldson, C. Tapie, K. Begay-Jackson, B. Demartin, A. Ouzounis, J. Shu, L. Pastore, G. Febrany</i>	
DESIGNING ALTERNATIVE 3D SEISMIC SURVEYS FOR REDUCED ENVIRONMENTAL FOOTPRINTS USING THE SEISMIC TRACE DENSITY PARAMETER	157
<i>M. Naghizadeh, A. Crook, A. Birce, S. Ross</i>	
OPTIMIZING SEISMIC SURVEY DESIGN FOR FRONTIER EXPLORATION IN CYPRUS SALT BASINS	162
<i>C. Tapie, V. Brytik, S. Ou, L. Donaldson, A. Ouzounis, I. Fabuel-Perez, M. Guillois, D. Eke, S. Lee, M. Khalil, G. Febrany, L. Pastore</i>	
SEISMIC LAND ACQUISITION DESIGNED TO IDENTIFYING GEOLOGY AND ROCK PROPERTIES OVER STACKED PAY INTERVAL USING HTD 3D3C SURVEY IN THE PERMIAN BASIN	167
<i>B. Karr, A. Lewis, R. Bianco</i>	
A NOVEL AND LOW-COST SEISMIC ACQUISITION SYSTEM CONSISTING OF PERMANENT CONTROLLED LINEAR VIBRATORY SOURCES AND NEW AUTONOMOUS SEISMIC SENSORS FOR CCS/CCUS SITE CHARACTERIZATION, PLUME FRONT MAPPING AND REAL-TIME SEISMICITY MONITORING.....	172
<i>S. Li, N. Brooks, T. Chen, X. Fang, G. Knapo, H. Wilkinson</i>	
EXTENDING SEISMIC BANDWIDTH USING THE HARMONIC ENERGY OF A MARINE VIBRATOR SOURCE	177
<i>T. Wang, A. Jafargandomi, H. Aune</i>	
VALUE OF MARINE VIBRATORS FOR EFFECTIVE FREQUENCY-DEPENDENT SPATIAL SAMPLING OF SEISMIC WAVEFIELD.....	182
<i>A. Gandomi, A. Nath, S. Grion</i>	

NON-UNIFORM DISPERSED SOURCE ARRAYS FOR BROADBAND SEISMIC ACQUISITION	187
<i>J. Acedo, M. Sacchi</i>	
DEVELOPMENT OF A NOVEL SEISMIC ACQUISITION SYSTEM BASED ON FULLY AUTONOMOUS GLIDING OCEAN BOTTOM NODES.....	192
<i>F. Mancini, B. Hollings, G. Mangano, D. Gjini, D. Dieulangard, T. Manning, H. Debens</i>	
ON-DEMAND OCEAN BOTTOM NODES (OD OBN) FOR LOW-COST RESERVOIR MONITORING	197
<i>J. Lopez, S. Grandi, D. Juliano, A. Da Silva, R. Carvalho, V. Beal, T. Miranda, F. Santos, S. Dunn, N. Street, C. Kennard, J. Rietjens, E. Alexandre, C. Nevoso</i>	
3D SEISMIC SURVEY DESIGN BY MAXIMIZING THE SPECTRAL GAP	202
<i>Y. Zhang, Z. Yin, O. Lopez, A. Siahkoohi, M. Louboutin, F. Herrmann</i>	
CRYSTAL OSCILLATORS AND TEMPERATURE COMPENSATED DETERMINISTIC CLOCK CORRECTION	206
<i>T. Bunting, J. Jurok</i>	
ULTRA-DEEP JURASSIC ACQUISITION TECHNOLOGY AND ITS APPLICATION IN DUAL-COMPLEX LOW SN RATIO AREA, QAIDAM BASIN	211
<i>Y. Wu, Z. He, D. Wu, Y. Wang, C. Han, H. Yao</i>	
3D3C SEISMIC EXPLORATION FOR TIGHT SAND RESERVOIRS: CASE STUDY IN WESTERN CHINA	216
<i>W. Qingeng, H. Shanzheng, Z. Rongrong, X. Wanxue, Z. Ming, R. Cong, J. Longjiang, L. Ji</i>	
A CASE STUDY: JOINT 3D SURFACE SEISMIC AND VSP SURVEY AND ITS EFFECT IN COMPLEX STRUCTURAL AREAS OF SOUTHWEST CHINA.....	221
<i>H. Yuanyi, L. Xing, J. Liwei, L. Huefeng, W. Changhui, H. Jiang, C. Gaoming, J. Zhigang, W. Lifeng, Z. Sheng, W. Qiangjun, S. Jiangwei</i>	
ANISOTROPIC ELASTIC FULL WAVEFORM INVERSION FOR CROSSWELL SEISMIC DATA FOR WYOMING CARBONSAFE PROJECT	225
<i>O. Podgornova, P. Li, L. Lee, M. Johnson, Z. Jiao, F. McLaughlin, E. Borchardt, L. Liang, P. Bettinelli, J. Calvez</i>	
THE DEBLENDING PROCESSING OF MULTI-WELL 3D DAS-VSP DATA IN THE MIDDLE EAST	230
<i>F. Li, G. Yu, H. Liu, J. Song, Y. Zhang, Y. Chen, T. Yin, J. Han, Q. Li</i>	
ADAPTIVE OCCAM'S INVERSION FOR THE INTERPRETATION OF BOREHOLE ULTRA-DEEP AZIMUTHAL RESISTIVITY MEASUREMENTS.....	235
<i>W. Saputra, J. Hou, C. Torres-Verdin, S. Davydycheva, V. Druskin</i>	
TORTUOSITY AND GRAIN SIZE MODELING FOR PERMEABILITY PREDICTION IN CLASTICS	240
<i>V. Saxena</i>	
RESEARCH ON BOREHOLE TIME-DOMAIN ELECTROMAGNETIC ULTRA-FAR DETECTION METHOD OF ELECTRICAL SOURCE	245
<i>Z. Xiao, H. Hu, X. Zhang, Y. Zhang, J. Zhao, C. Fang, K. Shao, C. Yao, J. Yan</i>	
UNCERTAINTY QUANTIFICATION OF ANISOTROPIC ELASTIC CONSTANTS AND MUD SPEED USING BOREHOLE SONIC DATA	248
<i>T. Lei, K. Walker, A. Donald, A. Bolshakov, L. Liang, R. Prioul, E. Arteaga</i>	

HORIZONTAL WELL S-WAVE IMAGING METHOD AND APPLICATION	253
<i>H. Wu, P. Liu, N. Li, Y. Huang, H. Zhang, W. Zhang, H. Tian, Y. Li, Z. Feng, Y. Zeng</i>	
CALCULATING SENSITIVITIES FOR 3D INVERSION OF ELECTROMAGNETIC WELL LOGGING DATA	257
<i>C. Regis, P. De Carvalho</i>	
LOGGING WHILE DRILLING CHARACTERIZATION OF NORTH SLOPE HIGHLY LAMINATED BROOKIAN FORMATION.....	262
<i>T. Akindipe, P. Perfetta, C. Phillips, C. Shrivastava, J. Seitz, V. Tuong, A. Bhattacharya, V. Osara</i>	
PREDICTING S-WAVE SONIC LOGS USING MACHINE LEARNING WITH CONVENTIONAL LOGS FOR THE DELAWARE BASIN, TEXAS.....	267
<i>J. Lee, Y. Chen, R. Domisse, A. Savvaidis, G.-C. Huang</i>	
A POSSIBLE LINK BETWEEN COLLOIDAL MIGRATION OF PETROLEUM AND RESERVOIR DIAGENESIS.....	272
<i>J. Stainforth</i>	
REVISITING THE HYDROCARBON PROSPECTIVITY OF THE PENYU BASIN, OFFSHORE MALAYSIA	276
<i>O. Schenk, C. Tu, H. Maulana, P. Mullin, A. Hassan, J. Azwa, F. Deraman, S. Sulaiman, F. Ali, B. Wei, A. Abdullah</i>	
SUBSURFACE FORMATION PRESSURE GRADIENT VS. SLOPE: PERCEPTION AND PITFALLS	281
<i>S. Shaker</i>	
ROCK PHYSICS AND BASIN MODELING NEXUS FOR PREDICTING PORE PRESSURE.....	286
<i>Q. Li, T. Etzel, A. Konstantinou, P. Mazumdar</i>	
PRESSURE PREDICTION USING CONVERTED SHEAR WAVES FROM OBN DATA: A ROCK PHYSICS APPROACH.....	291
<i>P. Mazumdar, K. Searles, B. Olofsson, J. Gaiser, T. Krishnasami</i>	
AN OPEN SOURCE TOOLBOX TO AUTOMATE BASIN AND PETROLEUM SYSTEM MODELING FOR STATISTICAL ANALYSIS AND UNCERTAINTY QUANTIFICATION.....	296
<i>M. Ibrahim</i>	
FORWARD STRATIGRAPHIC MODELING AND UNCERTAINTY ANALYSIS OF PRE-SALT SOURCE ROCK THICKNESS IN THE SOUTHERN CAMPOS BASIN, BRAZIL: AN INVESTIGATION OF THE IMPACT OF THE MAIN GEOLOGICAL CONTROLS.....	301
<i>A. Almeida, G. Garcia, A. Spigolon, M. Clavijo, S. Dahir</i>	
OLD ROCKS, NEW WAYS: OUTCROP PSEUDO-WELL LOGS AND STRATIGRAPHY ALONG A THINNING DISTAL TO PROXIMAL TRANSECT THROUGH THE FUSSELMAN FORMATION AND MONTOYA GROUP	306
<i>A. Roark</i>	
CARBONATE DEPOSITIONAL FACIES AT THE EXPLORATION, DEVELOPMENT, AND RESERVOIR MODELING-SCALES - A PERSPECTIVE FROM THE MODERN	311
<i>P. Harris, S. Purkis</i>	

MAPPING AND QUANTIFICATION OF ROCK PROPERTIES IN HETEROGENEOUS CARBONATES. READY FOR UPSCALING CARBONATES	316
<i>C. Taberner, A. Fadili, S. Berg, F. Marcelis, Y. Gao, R. Bouwmeester, W. Voever, M. Boone, J. Dewanckele, T. Sorop, J. Horst</i>	
RESERVOIR HETEROGENEITY AND FLUID FLOW IMPLICATION OF THE LATE-JURASSIC ARABIAN STROMATOPOROIDCORAL BUILDUP FACIES DURING WATERFLOOD: AN INSIGHT FROM 3D OUTCROP ANALOG	321
<i>A. Ramdani, G. Gairola, A. Omar, P. Khanna, H. Hoteit, V. Vahrenkamp</i>	
RESEARCH ON FACIES-CONTROLLED INVERSION METHOD OF ULTRA-DEEP CARBONATE FRACTURE-CAVITY RESERVOIR BASED ON MULTI-ATTRIBUTE CONSTRAINTS	326
<i>Y. Zeng, T. Du, P. Li, B. Liu</i>	
FLUID EVOLUTION IN STRIKE-SLIP FAULT ZONES OF LOWER PALEOZOIC TIGHT CARBONATE RESERVOIR IN NW TARIM BASIN, CHINA.....	331
<i>Y. Yao, L. Zeng</i>	
APPLYING FORWARD STRATIGRAPHIC MODELING TO ENHANCE UNDERSTANDING OF DEPOSITIONAL EVOLUTION OF ANCIENT CARBONATE PLATFORMS AND IMPROVE GEOSTATISTICAL MODELS: A CASE STUDY IN SOUTHWESTERN CHINA.....	336
<i>Y. Huang, T. Duan, Y. Liu</i>	
SPHERULITSTONE AS A TRANSITIONAL FACIES RESPONDING TO LAKE LEVEL VARIATION – DIAGENETIC OR DEPOSITIONAL.....	341
<i>S. Tonietto, J. Gomes, R. Bunevich, M. Erthal</i>	
STUDY ON THE CHANGE OF SHALE PROPERTIES AFTER LONG-TERM STORAGE OF SUPERCRITICAL CARBON DIOXIDE	346
<i>T. Zhang, Y. Li, E. Jiang, Y. Lin, J. Zou, W. Zhou, C. He</i>	
HYDROTHERMAL RESERVOIRS AS A CO ₂ STORAGE RESOURCE IN APPALACHIA	351
<i>R. Hunt, B. Petras, D. James</i>	
2D SEISMIC SURVEYS AS AN ALTERNATIVE FOR CO ₂ MONITORING IN THE NORTH DAKOTA CARBONSAFE PROJECT.....	356
<i>C. Barajas-Olalde, D. Adams, H. Gonzalez, M. Zhang, P. Benitez, R. Klapperich, W. Peck, P. Doulgeris</i>	
AN INTEGRATED WIRELESS SYSTEM FOR LONG-TERM AND REAL-TIME SUBSURFACE CO ₂ MONITORING.....	361
<i>X. Li, C. Huang, M. Pan, X. Shan, J. Chen</i>	
INCORPORATING REFRACTION TIME-SHIFTS INTO GEOPHYSICAL MONITORING SYSTEMS FOR MONITORING SHALLOW CO ₂ ACCUMULATIONS	366
<i>M. Steel, S. Ridder, M. Branston, J. Butt, G. Busanello</i>	
REAL-TIME AND QUANTITATIVE MONITORING OF CO ₂ INJECTION WITH RAPID-REPEAT TIME-LAPSE VERTICAL SEISMIC PROFILE DATA.....	371
<i>X. Cai, K. Innanen, Q. Hu, S. Keating, M. Eaid, D. Lawton</i>	
A DENOISING DIFFUSION PROBABILISTIC MODELING APPROACH FOR PREDICTING CO ₂ PLUME EVOLUTION FROM SEISMIC SHOT GATHERS	376
<i>A. Sun, Z. Leong, T. Zhu</i>	

CO2-EOR MONITORING USING TIME-LAPSE FWI WITH WALKAWAY VSP DATASETS IN A CARBONATE FIELD ONSHORE ABU DHABI.....	381
<i>Y. Yamada, S. Nakayama, T. Ishiyama, M. Mochizuki, T. Mouri, H. Shimizu, A. Al Hamedi, A. Aljaberi</i>	
FAULT MLREAL: A FAULT DELINEATION STUDY FOR THE DECATURCO2 FIELD DATA USING NEURAL NETWORK PREDICTED PASSIVE SEISMIC LOCATIONS.....	386
<i>H. Wang, Y. Chen, T. Alkhalfah, Y. Lin</i>	
SURROGATE OPTIMIZATION UNDER UNCERTAINTY FOR GEOLOGICAL CARBON STORAGE.....	391
<i>J. Hernandez-Mejia, Y. Yuan, K. Dugan, Q. Li</i>	
INTEGRATED SUBSURFACE CHARACTERIZATION AND EVALUATION OF CO2 STORAGE POTENTIAL OF THE ILLINOIS BASIN DECATUR PROJECT (IBDP).....	396
<i>G. Shodunke, C. Henriques, Q. Maqbali, Mj. Madariaga, O. Alo, K. Buckmire, I. Ferreira</i>	
NUMERICAL MODELING STUDY OF THE CO2 TRAPPING CHARACTERISTICS OF THIN-SKINNED FOLD AND THRUST.....	401
<i>L. Koehn, P. Prince, R. Polyea</i>	
THE EFFECT OF DEPOSITIONAL ENVIRONMENT ON SUSTAINING A CARBON STORAGE SITE	406
<i>T. Osunrinde, Syelisetti, V. Sanchez</i>	
A NEW WORKFLOW FOR TIME-LAPSE SEISMIC METADATA EXTRACTION AND PROCESSING TO CONTINUOUSLY MONITOR AND PREDICT THE CO2 PLUME FRONT	411
<i>F. Chen, K. Keim</i>	
ACTIVE-SEISMIC MONITORING OF PORE PRESSURE CHANGES IN AN ANALOG RESERVOIR	416
<i>T. Shadoan, J. Ajo-Franklin, J. Patterson, T. Zhu</i>	
COMBINED OBN AND HIGH-RESOLUTION 3D STREAMER ACQUISITION FOR CO2 MONITORING: INITIAL MODEL BUILDING AND IMAGING RESULTS OVER SLEIPNER.....	421
<i>S. Stokes, E. Cho, D. Mondal, G. Stock, S. Baldock</i>	
MICROSEISMIC SENSOR PLACEMENT OPTIMIZATION FOR RAPID LEAKAGE ALARM OF GEOLOGIC CARBON STORAGE.....	426
<i>Y. Zi, L. Fan, X. Wu, J. Chen, Z. Han</i>	
ESTIMATING CO2 SATURATION AND POROSITY USING THE DOUBLE DIFFERENCE APPROACH BASED INVERTIBLE NEURAL NETWORK.....	430
<i>A. Dhara, M. Sen, S. Dasgupta</i>	
MULTI-WELL 3D DAS-VSP DATA ACQUISITION FOR OFFSHORE EXPLORATION IN THE MIDDLE EAST	435
<i>Q. Li, G. Yu, J. Zhao, D. Huang</i>	
SPECIALIZED PROCESSING OF A MASSIVE DISTRIBUTED ACOUSTIC SENSING (DAS) 3D-VSP IN A PRODUCING WELL.....	440
<i>A. Sayed, F. Twynam, R. Bachrach, P. Caprioli, M. Holloway, Q. Li, R. Biswas, D. Tebo, S. Buist</i>	

STAGE-LEVEL HYDRAULIC FRACTURE WIDTH AND HEIGHT QUANTIFICATION THROUGH STOCHASTIC INVERSION OF DISTRIBUTED FIBER-OPTIC STRAIN SENSING DATA.....	445
<i>Y. Liu, L. Liang, S. Zeroug</i>	
HYDRAULIC FRACTURE APERTURE ESTIMATION USING LOW-FREQUENCY DAS AND DSS IN AUSTIN CHALK AND EAGLE FORD SHALE.....	449
<i>X. Zhu, J. Ajo-Franklin, J. Correa, Y. Ma, J. Saw, L. Luo, K. Soga</i>	
NONDESTRUCTIVE TESTING FOR WELLBORE INTEGRITY WITH DISTRIBUTED ACOUSTIC SENSING	454
<i>I. Ning, M. Craven, T. Tokar, S. Dasgupta, P. Benet, M. Merlino</i>	
DAS MICROSEISMIC REFLECTION IMAGING FOR HYDRAULIC FRACTURE AND FAULT ZONE MAPPING	459
<i>Y. Ma, J. Ajo-Franklin, A. Nayak, X. Zhu, J. Correa</i>	
GEOTHERMAL EXPLORATION AT KIJIYAMA KJ-5 HOT GEOTHERMAL BOREHOLE IN NORTHEASTERN JAPAN USING DTS AND DAS.....	464
<i>J. Kasahara, Y. Hasada, M. Suzuki, T. Takahashi, H. Mikada, H. Ohnuma, Y. Fujise</i>	
HYDRAULIC FRACTURE STAGE IDENTIFICATION AND SIZE ESTIMATION USING DISTRIBUTED STRAIN AND TEMPERATURE SENSING	469
<i>J. Saw, L. Luo, J. Correa, K. Soga, X. Zhu, J. Ajo-Franklin, E. Kerr, R. Bohn</i>	
REVOLUTIONIZING SEISMIC DATA COMPRESSION: UNLOCKING THE POWER OF STABLE DIFFUSION NEURAL NETWORKS	474
<i>A. Abdullin, U. Waheed, N. Iqbal</i>	
INTEGRAL EQUATION BASED WELLBORE PRECONDITIONER FOR 3D ELECTROMAGNETIC RESPONSE MODELING	479
<i>M. Elliott, M. Everett</i>	
THE INTERFEROGRAPHIC TEM (ITEM) METHOD: ARRAY BEAMFORMING FOR TEM FIELD COMPACTION AND RESOLUTION IMPROVEMENT	484
<i>B. James, K. Noh, A. Swidinsky, J. Stoll, D. Ball</i>	
MAGNETOTELLURIC INVERSION USING SUPERVISED LEARNING TRAINED WITH RANDOM SMOOTH GEOELECTRIC MODELS	489
<i>L. Liu, B. Yang, Y. Xu, D. Yang</i>	
RESERVOIR RESISTIVITY ASSESSMENT, BEST PRACTICES AND PITFALLS	493
<i>D. Baltar</i>	
BROADBAND MAGNETOTELLURIC STUDY OF THE AXIAL FAULT REGION OF THE NEW MADRID SEISMIC ZONE.....	498
<i>K. Sarker, C. Cramer, C. Langston, R. Bhattachari, A. Mahanama</i>	
THE EARTH'S RADIAL CONDUCTIVITY MODEL DERIVED FROM THE LATEST CSES AND SWARM SATELLITE DATA	503
<i>M. Lai, X. Ren, C. Yin, Y. Liu, B. Zhang, Y. Su</i>	
ASSESSING OFF-STRUCTURE POTENTIAL OF MARRAT RESERVOIR OF JURASSIC AGE.....	508
<i>M. Al-Mershedy, A. Prakash, D. Djanawir, A.-R. Mansor, V. Chilumuri, A.-S. Nemer, T. Al-Adwani, N. Al-Amar</i>	

APPLICATION OF INTERPOLATION TO REGIONAL 2D DATA TO PRODUCE 500,000 KM ² OF 3D DATA TO VISUALIZE EXPLORATION PLAYS ALONG THE EAST COAST OF INDIA.....	513
<i>D. Davies</i>	
FORENSIC CHARACTERIZATION OF THE WILCOX: A NEW MULTI-DISCIPLINARY APPROACH TO SUPPORT STRATIGRAPHIC CORRELATION SEDIMENT DISPERSAL MAPPING AND RESERVOIR ZONATION.....	518
<i>T. Pearce, M. Franzel, D. Riley, J. Hirani, N. Campion, E. Daneshvar, G. Hildred</i>	
INTEGRATED WELLSITE BIOSTRATIGRAPHY AND CHEMOSTRATIGRAPHY: A MULTI-DISCIPLINARY APPROACH FOR DRILLING THE WILCOX.....	521
<i>T. Pearce, P. Cornick, D. Riley, N. Campion, E. Daneshvar, P. O'Neill, G. Hildred</i>	
QUANTITATIVE EVALUATION OF HYDROCARBON CONTAINMENT USING SEAL STRENGTH INDEX (SSI) AND BENCHMARKING AGAINST GLOBAL ANALOGUES.....	526
<i>S. Wu, S. Sun, D. Pollitt</i>	
IMPROVING RESERVOIR IMAGING USING LONG-OFFSET OBN DATA: A CASE STUDY FROM CONGER FIELD, GULF OF MEXICO	531
<i>B. Deng, H. Su, B. Bonala, J. Mei, J. Lewis, E. Ortiz, W. Martins</i>	
RESOLVING GEOLOGICAL COMPLEXITY WITH LEGACY STREAMER SURVEY: POTIGUAR 3D OFFSHORE BRAZIL CASE STUDY	536
<i>S. Yong, M. Cvetkovic, T. Johnson, B. Soelistijo, L. Ge</i>	
IMPACT OF FULL-WAVEFIELD INVERSION (FWI) BASED HIGH-RESOLUTION MODEL BUILDING AND Q IMAGING ON EXPLORATION AND DEVELOPMENT AT GUYANA STABROEK	541
<i>F. Song, P. Monigle, J. Yan, V. Gudipati, X. Li, S. Lee, S. Hemmings-Sykes, A. Persaud, J. Pape, L. Gilchrist, A. Abdi, E. Lalli, A. Venkataraman, R. Neelamani, S. Knapp, K. Solvason</i>	
STRUCTURAL AND TIME-LAPSE IMAGING THROUGH GAS CLOUDS VIA FWI AT ELDISK FIELD, NORTH SEA	546
<i>Z. Li, L. Bencherif-Soerensen, P. Folstad, B. Macy, S. Shaw, B. Roy</i>	
DIFFERENTIABLE DYNAMIC-TIME WARPING DIVERGENCES IN FULL-WAVEFORM INVERSION	551
<i>M. Kalita, L. Casasanta</i>	
OPTIMAL TRANSPORT FOR ELASTIC SOURCE INVERSION.....	556
<i>T. Masthay</i>	
TIME-DOMAIN EXTENDED-SOURCE FULL WAVEFORM INVERSION FOR ACOUSTIC VERTICALLY TRANSVERSELY ISOTROPIC MEDIA: THEORY AND NUMERICAL VALIDATION	561
<i>G. Guo, S. Operto, H. Aghamiry</i>	
IMPLICATIONS OF ELASTIC FULL-WAVEFORM INVERSION FOR NORTHERN RED SEA.....	566
<i>K. Glaccum, D. Vigh, K. Wang, X. Tan, J. Qin, V. Robertson, T. Ferguson</i>	
QUANTITATIVE FWI CHARACTERIZATION OF RESERVOIR PROPERTIES AT THE CMC NEWELL COUNTY FACILITY	571
<i>Q. Hu, M. Eaid, S. Keating, K. Innanen, X. Cai</i>	

VALUE OF ELASTIC FULL WAVEFIELD INVERSION IN DE-RISKING CLASTIC RESERVOIRS IN PRESENCE OF NOISE	576
<i>P. Routh, S. Nayak, J. Dorsett, K. Banerji, Y. Cha, V. Gottumukkula, G. Palacharla, V. Gudipati, R. Neelamani, S. Conway, A. Raphael</i>	
DATA SELECTION FOR VELOCITY MODEL ESTIMATION USING A CIRCULAR SHOT OBN SURVEY	581
<i>F. Costa, S. Da Silva, A. Karsou, F. Capuzzo, R. Moreira, J. Lopez, M. Cetale</i>	
MITIGATING THE EFFECTS OF GUIDED WAVES IN OBN DATA FOR ACOUSTIC FWI USING DATA RECONSTRUCTION: A DATA EXAMPLE FROM THE YGGDRASIL AREA.....	586
<i>M. Zuberi, E. Cho, T. Seher, R. Myklebust</i>	
TACKLING DATA CHALLENGES IN LAND FWI: A CASE STUDY	591
<i>V. Lopez, Y. Guo, Q. Li, B. Yu, C. Zhang</i>	
ELASTIC MULTI-PARAMETER FULL-WAVEFORM INVERSION APPLICATION ON SPARSE OCEAN-BOTTOM NODE DATA.....	595
<i>D. Vigh, X. Cheng, B. Bai, Z. Feng, K. Glaccum</i>	
HIGH-FIDELITY FULL WAVEFORM IMAGING VIA IMPEDANCE INVERSION	600
<i>F. Chen, Y. Zhang, L. Duan, W. Han, Y. Qin, Q. Song</i>	

VOLUME 2

ELASTIC FWI IMAGING OF A COMPLEX PRE-SALT STRUCTURE USING NATS DATA.....	605
<i>A. Henrique, L. Felao, S. Barragan, F. Jouno</i>	
FWI IMAGING OF COMPLEX SUBSALT MESOZOIC TARGETS FROM LAND TO SHALLOW WATERS	610
<i>T. Dy, M. Wang, S. Mothi, D. Dobesh, S. Ding, O. Andrade, P. Ortega, A. Cantu, S. Garcia, G. Leyva</i>	
MEETING THE IMAGING CHALLENGES AT ATLANTIS WITH HIGH-FREQUENCY ELASTIC FWI	615
<i>A. Hao, C. Chen, Z. Wei, J. Mei, L. Jiang, S. Buist, O. Egbue, L. Lopez, D. Tebo</i>	
MULTI-PARAMETER FWI IMAGING IN THE GULF OF MEXICO	620
<i>T. Rayment, K. Dancer, J. McLeman, J. Penwarden, T. Ooi, M. Hartmann</i>	
SIMULTANEOUS INVERSION OF VELOCITY AND ANGLE-DEPENDENT REFLECTIVITY	625
<i>N. Chemingui, Y. Yang, J. Ramos-Martinez, G. Huang, D. Whitmore, S. Crawley, E. Klochikhina, S. Arasanipalai</i>	
TIME-LAPSE FWI PREDICTION OF CO ₂ SATURATION AND PORE PRESSURE.....	630
<i>Q. Hu, K. Innanen</i>	
A DEEP LEARNING-BASED INVERSE HESSIAN FOR FULLWAVEFORM INVERSION	635
<i>M. Alfarhan, M. Ravasi, T. Alkhalfah</i>	
JOINT DATA- AND PHYSICS-MODEL-DRIVEN FULL-WAVEFORM INVERSION USING CMP GATHERS AND WELL-LOGGING DATA.....	640
<i>S. Wu, J. Geng</i>	

ACCELERATED AUGMENTED LAGRANGIAN FULL-WAVEFORM INVERSION BASED ON TRUNCATED RANDOMIZED SINGULAR VALUE DECOMPOSITION.....	645
<i>J. Li, H. Mikada, J. Takekawa</i>	
ENABLING TECHNOLOGIES FOR ECONOMICAL AND EFFICIENT CLOUD-BASED FWI	650
<i>H. Debens, D. Knodel, A. Umpleby, C. Mavropoulos</i>	
HIGH RESOLUTION IMAGING BY DYNAMIC MATCHING FWI IN THE PRESENCE OF AVO EFFECTS	655
<i>F. Gao, S. Dong, Y. He, J. Sheng, F. Liu, B. Wang, C. Calderon, Y. Ivanov, F. Marcy, O. Aaker</i>	
POTENTIAL OF FWI IMAGING FOR SHALLOW TURBIDITE SHADOW ZONE : A CASE STUDY.....	660
<i>S. Sarkar, J. Sheng, F. Liu, D. Davies, R. Ha</i>	
UNCERTAINTY QUANTIFICATION OF FULL WAVEFORM INVERSION WITH ADAPTIVE MCMC METHOD	665
<i>S. Hu, Z. Zhao</i>	
A GRAPH-SPACE OPTIMAL TRANSPORT FWI APPROACH BASED ON \hat{E} -GENERALIZED GAUSSIAN DISTRIBUTION.....	670
<i>S. Silva, G. Kaniadakis</i>	
MFF NET: A MULTI-SCALE FEATURE FUSION NETWORK FOR ELECTROMAGNETIC AND SEISMIC JOINT INVERSION	675
<i>Y. Wang, Z. Jia, Y. Li, W. Lu</i>	
REFLECTION WAVEFORM INVERSION REGULARIZED WITH STRUCTURAL CONSTRAINTS AND SCATTERED DATA INTERPOLATION.....	680
<i>C. Wu, H. Wang, B. Feng, T. Lei, R. Xu, S. Sheng</i>	
IMAGING THE PRE-SALT WITH ELASTIC FWI USING OBN DATA.....	685
<i>G. Brando, B. Huard, L. Cypriano</i>	
INFLUENCE OF NODE POSITION UNCERTAINTY ON FWI AND MIRROR-RTM	690
<i>F. Capuzzo, M. Cetale, S. Silva, R. Moreira, F. Costa, A. Karsou, J. Lopez</i>	
A COMPLEX BIMODAL FLUID GRADIENT IN A SIMPLE TILTED SHEET RESERVOIR IS EXPLAINED AND MODELED BY (BIOGENIC) GAS ADDITION TO AN OIL COLUMN	695
<i>M. Kristensen, T. Mohamed, C. Torres-Verdin, O. Mullins</i>	
NANOTECHNOLOGY AND ADVANCED GEOCHEMICAL OIL CHARACTERIZATION IN ALMOST REAL-TIME WELL DRILLING OPERATION: A NAMIBIAN OFFSHORE CASE HISTORY.....	699
<i>M. Mello, J. Moldowan, J. Dahl</i>	
RESERVOIR SIMULATION OF CHARGE HISTORY OVER GEOLOGIC TIME MATCHES MANY MEASUREMENTS OF CONNECTIVITY IN STACKED TURBIDITE RESERVOIRS	704
<i>T. Mohamed, M. Kristensen, C. Torres-Verdin, O. Mullins</i>	
ANALYSIS OF POTENTIAL FIELDS THROUGH SOURCE DECOMPOSITION IN HYPERCOMPACT ATOMS.....	709
<i>M. Maiolino, L. Bianco, G. Florio, M. Fedi</i>	
RETRIEVING GEOLOGICAL SIGNAL FROM FULL TENSOR GRAVITY GRADIOMETRY DATA USING SOURCE BODY MIGRATION.....	714
<i>C. Murphy, R. Farnell, C. Bellamy, A. Morgan</i>	

DELINEATION OF VMS DEPOSITS IN THE BATHURST MINING CAMP, NB, BASED ON LINEAMENT ANALYSIS AND JOINT INTERPRETATION OF 3D FTG AND MAGNETIC DATA INVERSION	719
<i>P. Yang, A. Peace, C. Murphy, A. Morgan, L. Clark</i>	
EXPLOITING NON-UNIQUENESS: IMPROVING INVERSION RESULTS BY POST-PROCESSING.....	724
<i>J. Brewster</i>	
COMPARISON OF POTENTIAL FIELDS INVERSION TECHNIQUES FOR BASEMENT RELIEF RECOVERY: A CASE STUDY FROM THE TAUBATÉ BASIN, BRAZIL	729
<i>F. Hermes, G. Lenz, L. Miquelutti, M. Cetale</i>	
LOOKING FOR A SIMPLIFIED AND GENERALIZED TRAINING SET IN ML APPLICATIONS FOR GRAVITY MODELLING.....	734
<i>L. Bianco, C. Messina, M. Fedi</i>	
THE POTENTIAL OF MAGNETIC FIELD MEASUREMENTS IN FRACKING MONITORING AND ANISOTROPIC SCENARIOS	738
<i>A. Curcio</i>	
INTELLIGENT DIGITAL ROCK PHYSICS ASSISTING QUANTITATIVE SEISMIC INTERPRETATION.....	743
<i>Z. Hou, D. Cao, X. Wang</i>	
NOVEL APPLICATION OF MACHINE LEARNING ASSISTED FAULT INTERPRETATION TO DELINEATE EARTHQUAKE RISK FROM SALTWATER DISPOSAL IN THE MIDLAND BASIN.....	748
<i>N. Shumaker</i>	
CASCADED DEEP LEARNING FOR FAST-TRACK STRUCTURE MODEL BUILDING FROM 2D SEISMIC DATA	753
<i>T. Zhao, L. Truelove</i>	
HORIZON DETECTION WITH CNN-BASED MULTI-SCALE VOLUMETRIC FLATTENING	758
<i>J. Lomask</i>	
STRATIGRAPHIC CONSTRAINT FOR DEEP LEARNING IMAGE SEGMENTATION OF GEOLOGICAL UNITS.....	763
<i>L. Boillot, A. Thouvenot, J. De Chizelle, S. Guillon</i>	
STRUCTURAL INTERPRETATION OF SEISMIC IMAGES WITH VOLUMETRIC HYPERSURFACE CURVATURES	768
<i>A.-L. Tertois, I. Ravve, Z. Koren</i>	
SYN-RIFT AND PRE-RIFT SECTION IN THE COLORADO BASIN, OFFSHORE ARGENTINA: AN INTEGRATION OF NEW LONG OFFSET 2D SEISMIC REFLECTION DATA WITH POTENTIAL FIELDS AND VINTAGE SEISMIC REFRACTION DATA	773
<i>S. Devito, D. Bird, M. Cvetkovic</i>	
APPLYING SEISMIC SEDIMENTOLOGY TO RESTORE NEOGENE LENGHU AND QUATERNARY SANHU SEDIMENTARY FACIES IN QAIDAM BASIN, NW CHINA	777
<i>Z. Xu, G. Long, Y. Wang, H. Zeng, B. Wang, J. Zhu</i>	
COMPARISON OF SEISMIC RESOLUTION ENHANCEMENT TECHNIQUES: SPECTRAL EXTRAPOLATION VS SPECTRAL BALANCING	782
<i>C. Puryear</i>	

DIRECT S-WAVE SEISMIC DATA INTERPRETATION FOR CHANNEL SAND RESERVOIR AT SANHU AREA, WEST CHINA.....	786
<i>R. Zhang, Z. Deng, Y. Wang, X. Xi, X. Wang, J. Wang</i>	
QUANTITATIVE IDENTIFICATION OF LITHOFACIES BY INTEGRATING DIFFERENT GEOPHYSICAL DATA: FALSE RIVER POINT BAR.....	791
<i>T. Ali, J. Lorenzo</i>	
RESEARCH OF ACCURATE DEPTH INTERPRETATION METHOD FOR THIN SAND BODY IN OFFSHORE RESERVOIR AND ITS APPLICATION IN A OILFIELD, BOHAI BAY BASIN	796
<i>L. Wenbin, H. Tang, X. Liu, Y. Wang</i>	
EXPLORING NATURALLY FRACTURED RESERVOIRS: A CASE STUDY	801
<i>A. Prakash, M. Al-Abdullah, A. Naser, A.-O. Mohammed, B. Chakrabarti, R. Mulyono, V. Chilumuri, A.-M. Thuwaini, T. Al-Adwani, A. Amar, A.-O. Homoud</i>	
OVERCOMING 3D SEISMIC RESOLUTION ISSUES IN A TURBIDITIC COMPLEX FIELD – US GOM	806
<i>R. Lotti, A. Marini, M. Ferla, V. Zorgnotti, A. Corrao, L. Bianchin, R. Martin</i>	
ADAPTIVE UMAP BASED MULTIPLE-FREQUENCY ATTRIBUTE BLENDING AND ITS APPLICATION ON HYDROCARBON RESERVOIR CHARACTERIZATION	811
<i>Z. Zhang, N. Liu, Y. Yang, Z. Wang, R. Liu, J. Gao</i>	
INTEGRATED GEOLOGICAL AND GEOPHYSICAL INTERPRETATION OF THE COMPLEX TIMOR OROGEN: INSIGHTS INTO THE TECTONIC AND BASIN EVOLUTION.....	816
<i>F. Xavier-Conceicao, M. Costa, J. Sousa, J. Eccles, L. Strachan, B. Duffy</i>	
APPLICATION OF GENETIC INVERSION CONSTRAINED BY NUMERICAL MODEL OF SEDIMENTARY EVOLUTION IN RESERVOIR PREDICTION OF PALEOGENE FAN DELTA IN BOHAI BAY BASIN	821
<i>W. Wang, Z. Zhang, L. Chen, C. Yang</i>	
CONTROL EFFECT OF KARST PALEOGEOMORPHOLOGY ON THE SEDIMENTATION OF MARINE-CONTINENTAL TRANSITIONAL SHALE STRATA AND ITS GEOLOGICAL SIGNIFICANCE -USING THE LOWER PERMIAN SHANXI FORMATION IN THE EASTERN ORDOS BASIN AS AN EXAMPLE	826
<i>X. Wang, L. Zhou, Y. Wu, D. Yu</i>	
THE IMPACT OF THE SYNTHETIC SEISMIC DATA GENERATION METHOD ON AUTOMATED AI-BASED HORIZON INTERPRETATION	831
<i>F. Vizeu, J. Zambrini, A. Canning</i>	
TECTONIC EVOLUTION OF FAULTS AND FRACTURES AT THE SODA LAKE GEOTHERMAL FIELD IN NEVADA	835
<i>M. Bugti, Y. Zheng, K. Gao, L. Huang, L. Navarro</i>	
DIRECT MODELING OF RESERVOIR PROPERTIES FROM SEISMIC PARTIAL-ANGLE STACKS.....	840
<i>J. Pendrel, H. Schouten</i>	
UNDERSTANDING THE DEPOSITIONAL MODEL OF THE SPRABERRY FORMATION USING FACIES INVERSION	845
<i>P. Bhatnagar, V. Anantharamu, R. Bianco</i>	

GEOBODY-ORIENTED INTERPRETABLE VELOCITY FUSION MODELING IN DEPTH DOMAIN WITH SEISMIC FACIES INFORMED SEGMENTATION METHOD	850
<i>M. Li, Q. Zeng, H. Shou, N. Qin, C. Wang, T. Zeng</i>	
FINE DESCRIPTION OF COMPOSITE CHANNEL SAND BODIES BASED ON MULTI-SEISMIC ATTRIBUTE CMY FUSION TECHNOLOGY	855
<i>Z. Zhang, J. Wang, H. Tang, X. Liu</i>	
FREQUENCY-DEPENDENT REFLECTION CHARACTERISTICS OF SINGLE THIN LAYER AND WAVEFORM INVERSION.....	860
<i>Z. Kuai, D. Cao, C. Jin</i>	
SEISMIC RESERVOIR CHARACTERIZATION OF THE STRAWN GROUP, NORTHERN PART OF THE EASTERN SHELF, KING COUNTY, NORTH-CENTRAL TEXAS: CASE STUDY.....	865
<i>O. Ogiesoba</i>	
SEISMIC SIGNATURES OF PORE-FLUID MOBILITY IN HETEROGENEOUS RESERVOIRS	870
<i>Q. Li, B. Wheelock, T. Tran, F. Santosa</i>	
DEPTH CORRECTION USING VELOCITY FOR STRUCTURE CALIBRATION AT LEVIATHAN FIELD, OFFSHORE ISRAEL	875
<i>Y. Zhou, B. Christensen, L. Christianson</i>	
GATED BASED QUANTUM COMPUTER ALGORITHM FOR GEOPHYSICAL INVERSION	880
<i>J. Monsegny, D. Trad, D. Lawton</i>	
A NOVEL APPROACH TO ESTIMATING PRESSURE DEPLETION FROM 4D SEISMIC SOFTENING SIGNALS ALONG OIL-WATER CONTACT. A PRACTICAL GOM APPLICATION	885
<i>C. Bao, L. Colmenares</i>	
AIRBORNE GRAVITY GRADIOMETRY: A CASE STUDY FOR INTEGRATED INTERPRETATION FROM THE UPPER ASSAM BASIN IN NORTHEAST INDIA.....	890
<i>S. Singha, P. Singh, A. Kumar, K. Dasgupta</i>	
EVERGREEN DIGITAL SUBSURFACE GEOSTRUCTURE AND GEOMECHANICS MODEL FOR OPTIMIZED WELL DRILLING	895
<i>G. Yan, Q. Lei, P. Liu, L. Liang, T. Lei, Y. Huang, P. Bolchover; G. Wang, H. Zhao, M. Sun</i>	
UNLOCKING VALUE THROUGH AUTOMATED ASSET PERFORMANCE OPTIMIZATION FOR SUSTAINABLE PRODUCTION.....	900
<i>Y. Agbor, P. Salapakkam, N. George</i>	
DUAL CONSTRAINED RESERVOIR MODELING WITH GEOLOGICAL FACTORS AND SEISMIC ATTRIBUTES FOR EXPLORATION STAGE	904
<i>H. Luo, C. Wang, Z. Zhang</i>	
FAULT INTERSECTION AND INDUCED SEISMICITY: THE EFFECTS ON THE INDUCED STRESS FIELD AND THE DYNAMIC RUPTURE, AND THEIR IMPLICATIONS	909
<i>J. Ruan, R. Ghose, W. Mulder</i>	
A MIDLAND BASIN OPERATOR'S APPROACH TO DATA COLLECTION AND CURRENT BEST PRACTICES FOR MITIGATING INDUCED SEISMICITY	914
<i>M. Dighans, B. Davis, A. Ufford, R. Kavanagh, P. Hennings</i>	

INDUCED SEISMICITY IN HOWARD COUNTY I: THE BURIED GRENVILLE FRONT IN THE MIDLAND BASIN AND ITS ROLE IN LOCALIZING INDUCED SEISMICITY, TEXAS	916
<i>A. Keene, J. Zawila, T. Lupo, R. Gibson, A. Huffman, R. Storniolo</i>	
INDUCED SEISMICITY IN HOWARD COUNTY V: TECHNICAL AND REGULATORY CHALLENGES FOR INDUCED SEISMICITY AND DEEP DISPOSAL OF FLUIDS	921
<i>A. Huffman, T. Lupo, R. Storniolo, A. Keene, J. Zawila, E. Hiemstra, T. Chen, E. Marlow, X. Fang, N. Brooks, S. Bowman, N. Fleegal, A. Ramsay</i>	
AUTOMATED PROCESSING DEVELOPMENT AT A CO ₂ SITE: PHASE DETECTION, LOCATION, MAGNITUDE	926
<i>J. Zhang, K. Hutchenson, E. Grant, P. Nyffenegger, M. Tinker</i>	
PROBABILISTIC CENTROID MOMENT TENSOR INVERSIONS USING GEOLOGICALLY CONSTRAINED PRIORS: APPLICATION TO INDUCED EARTHQUAKES IN THE GRONINGEN GAS FIELD, THE NETHERLANDS.....	930
<i>L. Masfara, C. Weemstra, T. Cullison</i>	
A DENSE LINEAR ARRAY FOR PASSIVE SEISMIC IMAGING OF GEOTHERMAL STRUCTURAL FEATURES: THE FOAL EXPERIMENT AT UTAH FORGE	935
<i>J. Kim, J. Ajo-Franklin, T. Shadoan, V. Sobolevskaia, J. Correa, B. Freifeld</i>	
FRACTURE AND REGIONAL STRESS-RELATED UPPER CRUSTAL AZIMUTHAL ANISOTROPY IN THE VICINITY OF THE 2016 M5.1 FAIRVIEW, OKLAHOMA, EARTHQUAKE	940
<i>E. Jiang, Y. Jia, J. Liang, D. Liu, S. Gao</i>	
BRIDGING THE GAP: DEEP LEARNING ON SEISMIC FIELD DATA WITH SYNTHETIC TRAINING FOR BUILDING GULF OF MEXICO VELOCITY MODELS.....	945
<i>S. Farris, R. Clapp</i>	
INVERTIBLE NEURAL NETWORK FOR AUTOMATIC VELOCITY MODEL BUILDING AND UNCERTAINTY QUANTIFICATION	950
<i>Y. Sun, J. Shen, P. Williamson</i>	
AUTOMATED VELOCITY MODEL BUILDING USING FOURIER NEURAL OPERATORS.....	955
<i>G. Huang, S. Crawley, R. Djebbi, J. Ramos-Martinez, N. Chemingui</i>	
COUNTERFACTUAL UNCERTAINTY FOR HIGH DIMENSIONAL TABULAR DATASET	960
<i>P. Chowdhury, A. Mustafa, M. Prabhushankar, G. Alregib</i>	
PERCEPTUAL QUALITY-BASED MODEL TRAINING UNDER ANNOTATOR LABEL UNCERTAINTY	965
<i>C. Zhou, M. Prabhushankar, G. Alregib</i>	
PROBABILISTIC SEISMIC INTERPOLATION WITH THE IMPLICIT PRIOR OF A DEEP DENOISER	970
<i>M. Ravasi</i>	
3D SEISMIC IMAGE-TO-IMAGE TRANSLATION	975
<i>X. Song, M. Zhou, L. Wang, R. Johnston</i>	
ANTI-ALIASING SEISMIC DATA INTERPOLATION BY DIP-INFORMED SELF- SUPERVISED LEARNING	980
<i>S. Wang, X. Wu, J. Chen</i>	

BAYESIAN VARIATIONAL AUTO-ENCODER FOR SEISMIC WAVELET EXTRACTION	985
<i>A. Ghanim, R. Durall, N. Ettrich</i>	
BOULDER PREDICTION FOR OFFSHORE WINDFARM SITE EVALUATION USING AN INTERACTIVE 2D CNN AND A UNIQUE WEIGHTING SCHEME ON UNMIGRATED SEISMIC	990
<i>S. Chambers, J. Lomask</i>	
UNSUPERVISED CLUSTERING OF FREQUENTLY REPEATED 4D SEISMIC DATA FOR DELINEATION OF CO ₂ PLUME DEVELOPMENT	994
<i>B. Sukar, C. Macbeth</i>	
SEMI-SUPERVISED LEARNING WITH KNOWLEDGE EMBEDDING FOR HORIZON VOLUMES CALCULATION	999
<i>R. Guo, H. Lin, M. Chen, C. Tao, Y. Gao, R. Wen</i>	
WHAT SAMPLES MUST SEISMIC INTERPRETERS LABEL FOR EFFICIENT MACHINE LEARNING?	1004
<i>R. Benkert, M. Prabhushankar, G. Alregib</i>	
INTEGRATING DEEP DIRECTIONAL RESISTIVITY WITH MACHINE LEARNING FOR IMPROVED WELL PLACEMENT IN THE NIKAITCHUQ FIELD, NORTH SLOPE ALASKA	1010
<i>C. McCullagh, J. Zuber</i>	
TRANSFORMER-BASED DEEP LEARNING MODEL FOR ACCURATE RATE OF PENETRATION PREDICTION IN DRILLING	1015
<i>C. Urdaneta, C. Jeong, X. Wu, J. Chen</i>	
DEEP LEARNING BASED AUTOMATIC MARKER SEPARATION	1020
<i>A. Katole, A. Abubakar, E. Hoekstra, S. Ryali, T. Zhao</i>	
FRACTURE-CAVITY CARBONATE RESERVOIR IDENTIFICATION BASED ON CHANNEL ATTENTION MECHANISMS	1025
<i>L. Yang, Y. Ma, G. Deng, Z. Wang</i>	
TWO-STAGE DEEP LEARNING FOR 3D JOINT INVERSION OF GRAVITY AND MAGNETIC	1030
<i>Y. Li, W. Lu, Z. Jia, C. Song</i>	
EFFICIENT SUBSURFACE CARBON STORAGE MODELING WITH FOURIER NEURAL OPERATOR	1035
<i>S. Pawar, P. Devarakota, F. Alpak, J. Snippe, D. Hohl</i>	
GENERATING GEOPHYSICAL MODELS FROM TEXT FOR CONSTRUCTING THE DATASET OF LEARNING-BASED MT INVERSION	1040
<i>Y. Li, H. Zhou, R. Guo, M. Li, A. Abubakar</i>	
SPATIAL STATISTICAL ANALYSIS AND GEOMODELLING OF BANANA HOLES USING POINT PATTERNS AND GENERATIVE ADVERSARIAL NETWORKS	1044
<i>R. Kanfar, C. Breithaupt, T. Mukerji</i>	
AN MT DATA INVERSION METHOD CONSTRAINED BY SEISMIC TEXTURE	1049
<i>H. Zhou, R. Guo, M. Li, F. Yang, S. Xu, A. Abubakar</i>	
DEEP COMPRESSED LEARNING FOR 3D SEISMIC INVERSION	1054
<i>M. Gelboim, A. Adler, Y. Sun, M. Araya-Polo</i>	

EDGE-INVERSIONNET: ENABLING EFFICIENT INFERENCE OF INVERSIONNET ON EDGE DEVICES	1059
<i>Z. Wang, I. Putla, W. Jiang, Y. Lin</i>	
LABEL-DEFECT TOLERANCE ABILITY OF DEEP LEARNING INVERSION NETWORKS AND ITS APPLICATIONS.....	1064
<i>Y. Ping, X. Hunqun, L. Di, T. Chunfeng, W. Chengxiang, Y. Changqing</i>	
INTELLIGENT EVALUATION AND PREDICTION OF RESERVOIR BASED ON MACHINE LEARNING METHOD.....	1069
<i>W. Zhao, T. Liu</i>	
EXPLORING THE POTENTIAL OF CHATGPT FOR KEYWORDS ANALYSIS	1073
<i>L. Changcheng</i>	
FAST VISCOACOUSTIC FORWARD MODELING METHOD BASED ON U-NET FOURIER NEURAL OPERATOR	1078
<i>W. Tian, Y. Liu</i>	
GENERALIZATION CAPABILITY OF DATA-DRIVEN DEEP LEARNING MODELS FOR SEISMIC FULL WAVEFORM INVERSION: AN EXAMPLE USING THE OPENFWI DATASET	1083
<i>A. Abdullin, U. Waheed</i>	
OPENFWI 2.0: BENCHMARK DATASETS FOR ELASTIC FULL-WAVEFORM INVERSION	1088
<i>S. Feng, H. Wang, C. Deng, Y. Feng, M. Zhu, P. Jin, Y. Chen, Y. Lin</i>	
UNSUPERVISED MACHINE LEARNING AS A VELOCITY PICKING ASSISTANT	1093
<i>C. Ursenbach, H. Odhwani</i>	
IMPLEMENTATION OF DENOISING DIFFUSION PROBABILITY MODEL FOR SEISMIC INTERPRETATION.....	1098
<i>F. Jiang, K. Osypov, J. Toms</i>	
OPTIMIZATION OF RELATIVE GEOLOGICAL TIME DERIVED FROM FLOW FIELD - A LABEL FREE APPROACH.....	1103
<i>Z. Li</i>	
SEISMIC DATA COMPRESSION BY VARIATIONAL AUTOENCODER WITH HYPERPRIOR	1108
<i>S. Wang, W. Hu, A. Abubakar, X. Wu, J. Chen</i>	
MACHINE LEARNING-BASED WORKFLOW FOR IDENTIFYING FRACTURES AND BAFFLES FROM FORMATION MICRO IMAGER (FMI) LOG: A PRACTICAL APPLICATION IN ILLINOIS BASIN DECATUR PROJECT (IBDP)	1113
<i>M. Adenan, E. Fathi, T. Carr, B. Panetta</i>	
DEEP LEARNING ENHANCED JOINT INVERSION FOR MINERAL EXPLORATION USING AIRBORNE GEOPHYSICS: APPLICATION IN DECORAH AREA.....	1117
<i>Y. Hu, X. Wei, X. Wu, J. Sun, J. Chen, Y. Huang</i>	
ERGODIC SAMPLING: A NEW DATA ACQUISITION METHOD TO GATHER MORE INFORMATION	1122
<i>M. Zhang, Y. Li</i>	
A NON-INVASIVE APPROACH FOR QUANTITATIVE EVALUATION OF GEOLOGICAL DEFORMATIONS AND DYNAMIC DISASTERS IN COMPLEX MINING ENVIRONMENTS	1127
<i>M. Khan, X. He, D. Song</i>	

GOLD TARGETING OF FIXED WING AEROMAGNETIC DATA USING STRUCTURAL COMPLEXITY, SELF-ORGANIZING MAP AND SUPERVISED DEEP NEURAL NETWORK ANALYSES: A CASE STUDY FROM THE RED LAKE CAMP, SUPERIOR PROVINCE, ONTARIO, CANADA	1131
<i>K. Kwan, J. Legault</i>	
BARE-EARTH SATELLITE IMAGERY AND THE SEARCH FOR HIDDEN LITHIUM-RICH BRINES: AN EXAMPLE FROM THE LITHIUM TRIANGLE IN SOUTH AMERICA.....	1136
<i>A. Baines, M. Broadley, J. Gines, W. Jeffery, O. Rhind</i>	
COMPARISON OF MAGNETIC VECTOR INVERSION WITH SPARSE NORM SUSCEPTIBILITY INVERSION ACCOUNTING FOR DEMAGNETIZATION.....	1141
<i>J. Weis, L. Heagy, D. Oldenburg</i>	
DEEP LEARNING BASED MICROEARTHQUAKE LOCATION PREDICTION AT NEWBERRY EGS USING PHYSICS-INFORMED SYNTHETIC DATASET.....	1146
<i>Z. Leong, T. Zhu</i>	
CRITICAL RAW MATERIALS MULTIDISCIPLINARY ANALYSIS: CASE STUDIES IN LI, GRAPHITE, NI-CO-CU-AU AND PGE METALS.....	1151
<i>N. Apeiranthitis, J. Hirani, L. Sardisco, M. Franzel, J. Tepsell, T. Pearce, J. Martin</i>	
MULTI-DOMAIN SIMULTANEOUS JOINT INVERSION FOR NEAR-SURFACE CHARACTERIZATION – A CASE STUDY FROM ONSHORE US.....	1156
<i>N. Johnson, A. Mohamed, Z. Jackson, S. Riseman, K. Douglas</i>	
FIRST RESULTS OF MUON TOMOGRAPHY OF A GIANT CLIFF - THE MAIDO RAMPART	1161
<i>C. Truffert, S. Bouteile, B. Moigne, J. Martea, N. Hueber, K. Samyn</i>	
IMPROVING POTABLE WATER ACCESS USING ELECTRICAL RESISTIVITY TOMOGRAPHY AND COMMUNITY ENGAGEMENT TO IDENTIFY GROUNDWATER POTENTIAL ZONES IN THE VILLAGE OF PHORTSE, SAGARMATHA NATIONAL PARK (KHUMBU), NEPAL	1165
<i>C. Cobb, K. Nicholson, J. Gruver, S. Acharya, S. Baniya, S. Hall, B. Hsn, E. Hayes, K. Neumann, M. Nishikawa, A. Pandey, S. Sharma, L. Sherpa, E. Subedi</i>	
TIME-LAPSE ELECTRICAL RESISTIVITY AND INDUCED POLARIZATION MONITORING OF A SIMULATED ECOSYSTEMSCALE COASTAL FLOODING EXPERIMENT	1169
<i>M. Adebayo, S. Ehosioke, E. Destiny, A. Hopple, P. Regier, P. Megonigal, N. Ward, V. Bailey, K. Doro</i>	
ESTIMATING SUBSURFACE GEOSTATISTICAL PARAMETERS FROM SURFACE-BASED GPR REFLECTION DATA USING A DEEP LEARNING APPROACH	1174
<i>Y. Liu, J. Irving, K. Holliger</i>	
ENHANCING HIGH-FREQUENCY VIBROSEIS IMAGES OF NEAR SURFACE: UNCORRELATED IS KEY	1179
<i>R. Miller, Z. Lawrence, A. Martinez, J. Ivanov, D. Borisov, J. Reilly</i>	
DELINATE BURIED METALLIC PIPES USING BOREHOLE MAGNETIC DATA IN CIVIL ENGINEERING	1183
<i>H. Rim, M. Zhang, Y. Li</i>	
UNCOVERING HIDDEN HISTORIES THROUGH A FIELD CAMP: GEOPHYSICAL SURVEYS FOR ARCHAEOLOGICAL INVESTIGATIONS OF SLAVERY IN GHANA.....	1187
<i>C. Boateng, D. Wemegah</i>	

IDENTIFICATION OF VEHICLES FROM SEISMIC SIGNALS USING MACHINE LEARNING	1192
<i>X. Zhu, J. Zhang</i>	
GPR SURVEYS REVEAL THE SUBSURFACE GEOLOGY OF MAJOR SEA TURTLE NESTING ISLANDS IN THE SAUDI WATERS OF THE ARABIAN GULF	1197
<i>S. Hanafy, K. Ayranci, R. Maneja, A. Flandez, J. Gopalan, D. Cortes</i>	
AUTOMATED DETECTION OF FERROMAGNETIC PIPELINES FROM MAGNETIC TOTAL- FIELD ANOMALY DATA USING CONVOLUTIONAL NEURAL NETWORKS	1201
<i>B. Bernstein, Y. Li, R. Hammack</i>	
GEOLOGY AND PALEO-DEPOSITIONAL ENVIRONMENT OF LERU AND ITS ENVIRONS, SOUTHERN - EASTERN, NIGERIA	1204
<i>F. Kelechi, K. Okeke, N. Ulası</i>	

VOLUME 3

A PHYSICS-BASED METHOD FOR FORECASTING INTERWELL CONNECTIVITY USING INJECTION DATA	1209
<i>J. Leng , J.-P. Nicot, K. Smye, P. Hennings</i>	
METHODS OF ESTIMATING WAVELET STATIONARITY, STABILIZING NON- STATIONARITY, AND EVALUATING ITS IMPACT ON INVERSION: A SYNTHETIC EXAMPLE USING SEAM II BARRETT UNCONVENTIONAL MODEL	1214
<i>J. Buckner, M. Fry, J. Zuech, P. Harris, B. Shea</i>	
GEOPHYSICAL CHARACTERIZATION OF STRATIGRAPHIC TRAPS WITHIN THE SLOPE FAILURE TURBIDITE CHANNEL OF TOROK FORMATION, NORTH SLOPE OF ALASKA.....	1219
<i>S. Dasgupta, C. Inyang, S. Riseman, D. Ruckel</i>	
BAYESIAN DISCRIMINATIVE CLASSIFICATION WITH KERNEL DENSITY ESTIMATION FOR ROCK AND FLUID PROPERTY CHARACTERIZATION OF SEISMIC ELASTIC INVERSION RESULTS.....	1224
<i>K. Wolf, J. Zhang, M. Walker, P. Paramo, J. Winterbourne, R. Biswas, A. Roy, C. Decalf</i>	
BURIED-HILL MULTI-SCALE FRACTURE PREDICTION USING WIDE AZIMUTH OBN SEISMIC DATA IN THE SOUTH CHINA SEA	1229
<i>X. Liu, Z. Zhang, L. Xu, R. Chen, D. Bian</i>	
PRESTACK AND POSTSTACK SEISMIC AMPLITUDE INTERPRETATION TO SUPPORT UNVEILING OIL POTENTIAL OF A HIGHLY STRATIGRAPHIC RESERVOIR	1234
<i>S. Garcia, A. Carrillat, W. Torres, P. Cisneros, V. Lucas, P. Bermeo, P. Gonzalez, J. Rodas, C. Miller, P. Zamora, K. Luzuriaga, J. Garrido</i>	
INTEGRATED CARBONATE RESERVOIR TYPES MODELING BASED ON THE PRT DEEP LEARNING AND MULTIPARAMETERS SEISMIC INVERSION AND ITS APPLICATION	1239
<i>C. Xin, S. Jiawen, L. Qing, S. Qian, Z. Min, Q. Qunli, W. Zhong, D. Xiao, Z. Tang, F. An, W. Bo, F. Hanzhou, X. Li, K. Huang, Q. Liu</i>	
DEEP CARBONATE RESERVOIR CHARACTERIZATION WITH UNSUPERVISED MACHINE LEARNING APPROACHES	1244
<i>X. Zhu, L. Zhao, X. Zhao, Y. You, M. Xu, T. Wang</i>	

IMAGE-BASED SIMULATION OF REMAINING OIL AND TWO PHASE FLUID FLOW IN HETEROGENEOUS SANDSTONES: THE IMPACT OF PORE-SCALE CHARACTERISTICS ON MACROSCOPIC PROPERTIES.....	1249
<i>C. Li, Y. Lu, D. Hou, M. Cui, J. Huang</i>	
MULTIDIMENSIONAL DATA-DRIVEN CHARACTERIZATION OF DEEPWATER TURBIDITE DEPOSITS, LEONARDIAN BONE SPRING FORMATION, DELAWARE BASIN, SOUTHEAST NEW MEXICO AND WEST TEXAS	1253
<i>R. Zhai, M. Pranter, J. Pigott</i>	
APPLICATION OF FREQUENCY-DEPENDENT ATTRIBUTES FOR GAS PROSPECT IDENTIFICATION.....	1258
<i>V. De Tomasi, A. Marini, M. Ferla, F. De Finis</i>	
IMPROVED CARBONATE RESERVOIR CHARACTERIZATION USING FORMATION DENSITY DERIVED FROM PRE-STACK SIMULTANEOUS INVERSION: A CASE STUDY IN WEST KUWAIT	1263
<i>R. Rajagopal, A. Al Otaibi, M. Jaseem, T. Chen, B. Faisal</i>	
MIGRATION OF DOLOMITE FINES (DOLO-TRASH) IN CLEAR FORK RESERVOIR, GOLDSMITH FIELD, PERMIAN BASIN	1268
<i>R. Lindsay</i>	
APPLICATION OF SEISMIC MULTI-ATTRIBUTE ANALYSIS FOR CARBONATE BURIED HILL RESERVOIR CHARACTERIZATION.....	1271
<i>X. Liu, T. Xia, J. Cai, M. Gong</i>	
ELASTIC DISPERSION IN SHALE: LABORATORY TESTS AND ROCK PHYSICS MODELING.....	1276
<i>R. Holt, A. Bakk, S. Lozovsky, K. Mews</i>	
ROCK PHYSICS OF FRACTURED CARBONATES.....	1281
<i>L. Vernik, A. Mur</i>	
USING ANISOTROPIC ROCK PHYSICS TO MODEL VTI PARAMETERS	1285
<i>M. Perez</i>	
AN ANALYTICAL MODEL FOR SQUIRT FLOW AND VISCOUS SHEAR RELAXATION IN POROUS ROCKS	1290
<i>Y. Alkhimenkov</i>	
MULTI-SCALE ANISOTROPIC DISPERSION AND ATTENUATION IN VTI MEDIA WITH PENNY-SHAPED CRACKS	1295
<i>Y. Feng, Z. Zong, G. Zhang</i>	
MODELING CONSOLIDATED SANDSTONES WITH DISPERSED CLAY	1300
<i>J. Gallop, L. Vernik, F. Contreras, J.-G. Restrepo, S. Blanco, G. Alvarez</i>	
FLUID AND PRESSURE EFFECTS ON SEISMIC DISPERSION AND ATTENUATION OF BEREA SANDSTONE: EXPERIMENTAL INVESTIGATIONS	1305
<i>Q. Wei, J. Zhang, J. Chen</i>	
ELASTIC PARAMETERS PREDICTION USING JOINT ELASTIC-ELECTRICAL MODELING	1310
<i>G. Wang, S. Chen</i>	

ESTIMATION OF SHEAR WAVE VELOCITY BASED ON ADAPTIVE STEP SIZE ALGORITHM	1315
<i>Y. Gu, J. Zhang</i>	
QUANTITATIVE CHARACTERIZATION OF LRATI SHALE THROUGH LABORATORY MEASUREMENT AND ROCK PHYSICAL MODELING	1318
<i>H. Yuan, J. Shi, R. Zhao, X. Hu</i>	
ANISOTROPIC ELASTIC MODULI OF PRESALT CARBONATES FROM SANTOS BASIN, BRAZIL	1323
<i>I. Neto, M. Ceia, R. Missagia, L. Oliveira, V. Santos, J. Moreira</i>	
ULTRASONIC VELOCITY TOMOGRAPHY OF ROCK SAMPLE	1328
<i>T. Xie, J. Zhang</i>	
HIGH-RESOLUTION CHEMOSTRATIGRAPHY AND BULK MINERALOGICAL CHARACTERIZATION OF THE WILCOX: A COMPLIMENTARY NEW MULTI-DISCIPLINARY APPROACH TO ENHANCED STRATIGRAPHIC CORRELATION	1332
<i>T. Pearce, D. Riley, J. Hirani, N. Campion, E. Daneshvar, G. Hildred</i>	
MULTI-SCALE JOINT CHARACTERIZATION OF BRAIDED RIVER DOMINANT FACIES: A CASE STUDY OF C1 OILFIELD IN THE BOHAI BAY BASIN	1337
<i>F. Wang, Z. Zhang, H. Song, J. Guo, X. Zhang</i>	
PREDICTING SAND COMPOSITION (QFR) DELIVERED INTO MIocene GOM BASIN USING BASIN CATCHMENTS FEATURES AND LEVERAGING MACHINE-LEARNING ALGORITHM	1341
<i>T. Engelder, J. Morantes, P. Lovely, R. Grimm, C. Swenberg, R. Caldwell, E. Wersan</i>	
ACOUSTIC MODELLING WITH ELASTIC AVA EFFECTS	1346
<i>R. Fletcher, J. Hobro, J. Rickett</i>	
AN ACOUSTIC WAVE EQUATION WITH THE GRADIENTS OF VELOCITY AND DENSITY	1351
<i>J. Bai, O. Yilmaz</i>	
VISCOELASTIC ANISOTROPIC SEISMIC WAVE MODELING USING RECURSIVE CONVOLUTION METHOD AND CURVILINEAR COLLOCATED FINITE DIFFERENCE METHOD FOR DIFFERENT BOUNDARIES	1356
<i>C. Jin, B. Zhou</i>	
A 3-D IMMersed BOUNDARY METHOD FOR ACOUSTIC WAVEFIELD SIMULATION WITH IRREGULAR SURFACE TOPOGRAPHY	1361
<i>X. Li, Z. Hu, Y. Tian, W. Liu, Z. Xu, G. Yao</i>	
TARGET-ORIENTED WAVEFIELD CALCULATION USING RECURSIVE PATCHED GREEN FUNCTIONS.....	1366
<i>E. Duarte, J. Schwarzrock, D. Da Silva, J. De Araujo, M. Ferreira</i>	
NUMERICAL EXPERIMENTS TO CHARACTERIZE P-WAVE ATTENUATION IN PARTIALLY SATURATED NON-ISOTHERMAL POROUS MEDIA	1371
<i>N. Arenas, G. Savioli, J. Santos, J. Carcione</i>	
SIMULATION OF SEISMIC WAVES IN THE FLUID-SOLID COUPLED THERMOELASTIC MEDIUM	1376
<i>S. Yang, G. Wu, J. Shan, H. Liu</i>	

THE MODELING AND SIMULATION OF SCHOLTE WAVE PROPAGATION AT FLUID-SOLID INTERFACE.....	1381
<i>Z. Wang, R. Huang, G. Song</i>	
A PARTICLE-BASED ELASTIC WAVE SIMULATION METHOD IN 3D ARBITRARY ANISOTROPIC MEDIA USING GPU.....	1386
<i>P. Wang, X. Jia</i>	
DECOPLED APPROXIMATION OF QP- AND QSV-WAVE IN ATTENUATED TI MEDIA	1391
<i>R. Huang, Z. Wang, G. Song</i>	
ACCURATE SIMULATIONS OF PURE P-WAVES IN ATTENUATING TRANSVERSELY ISOTROPIC MEDIA.....	1396
<i>Q. Mao, J. Huang, X. Mu</i>	
FORWARD MODELING FOR ARBITRARY IRREGULAR FREE-SURFACE BASED ON BODY-FITTED GRID	1401
<i>E. Wei, J. Huang, Z. Li</i>	
ACOUSTIC APPROXIMATION VTI REVERSE TIME MIGRATION USING PSEUDO-DEPTH MAPPING METHOD.....	1406
<i>X. Zhang, J. Huang, Z. Li</i>	
UPSIDE DOWN RAYLEIGH-MARCHENKO IMAGING: TOWARDS A PRACTICAL EXACT REDATUMING SCHEME FOR OCEAN BOTTOM ACQUISITIONS	1411
<i>N. Wang, M. Ravasi</i>	
HIGH RESOLUTION IMAGING IN THE CAMPOS BASIN USING LEGACY SEISMIC ACQUISITION	1416
<i>D. Brookes, D. Armentrout, M. Cvetkovic, T. Johnson, T. Sullivan</i>	
IMPROVING SEISMIC RESOLUTION BY REPROCESSING MULTIPLE SURVEYS AT NA KIKA FIELD	1421
<i>Q. Li, R. Chrisman, D. Baptiste, Y. Liu, D. Patel, C. Aroni</i>	
LATEST IMAGING ADVANCEMENTS IN SURINAME SHALLOW WATERS	1426
<i>J. Yang, Z. Sun, Z. Su, B. Hu, N. Chazalnoel</i>	
THE CONTRIBUTION OF RECENT DEVELOPMENTS IN SIGNAL PROCESSING TECHNOLOGY AND GEOLOGICAL CONSTRAINTS TO THE REIMAGING OF NARROW-AZIMUTH STREAMER DATA IN THE NORTH-EASTERN GULF OF MEXICO.....	1431
<i>H. Li, J. Hostetler, N. Peres, H. Cuenca, Z. Ge, W. Ibanez, C. Steichen, R. Gu, J. Hutson, M. Tomida</i>	
ELASTIC WAVE REVERSE TIME MIGRATION WITH DYNAMIC FOCUSED BEAMS FOR WEAK ANISOTROPIC MEDIA.....	1436
<i>N. Qin</i>	
THE NEED OF ELASTIC RTM FOR ELASTIC FWI MODELS	1441
<i>H. Huang, Z. Wu, X. Xiao, Z. Zhang, P. Wang</i>	
HIGH-RESOLUTION IMAGING USING GAUSSIAN BEAM POINT-SPREAD-FUNCTION DECONVOLUTION.....	1446
<i>J. Yang, J. Huang, H. Zhu, G. McMechan</i>	

HIGH-RESOLUTION IMAGING USING LEAST-SQUARES MIGRATION IN THE IMAGE DOMAIN (LSMI) FOR A MARINE DISTRIBUTED ACOUSTIC SENSING (DAS) 3D-VSP	1451
<i>A. Sayed, F. Twynam, R. Bachrach, M. Cavalca, L. Leon, M. Shadrina, Q. Li, R. Biswas, D. Tebo, S. Buist</i>	
HIGH FREQUENCY FWI ON CLAIR OBN DATASET -CHALLENGES AND SUCCESSES	1456
<i>M. Romanenko, L. Saxton, D. Davies, J. Sheng, F. Liu, J. Gromotka, Y. He</i>	
HIGH RESOLUTION ANGLE GATHER TOMOGRAPHY WITH FOURIER NEURAL OPERATORS	1461
<i>S. Crawley, G. Huang, R. Djebbi, J. Ramos, N. Chemingui</i>	
HIGH-RESOLUTION NEAR-SURFACE LAND FWI ACROSS THE DELAWARE BASIN FILL ZONE	1466
<i>T. Krishnasamy, J. Sheng, R. Florendo, J. Beck, A. Sierra, S. Murphy, J. Siebens, Y. Iwo-Brown</i>	
EIKONAL-EQUATION-BASED ADJOINT-STATE CHARACTERISTIC REFLECTION TRAVELTIME TOMOGRAPHY: METHOD AND APPLICATION IN REAL DATASET	1470
<i>J. Zhang, L. Dong, J. Wang, Y. Wang, C. Huang</i>	
FAST AND EFFICIENT STRUCTURE-ORIENTED PRECONDITIONING WITH ON-THE-FLY DIP ESTIMATION.....	1475
<i>R. Fuck, L. Casasanta</i>	
DEEP LEARNING-BASED VZ-NOISE ATTENUATION FOR OBS DATA	1480
<i>J. Sun, A. Jafargandomi, J. Holden</i>	
SEISMIC DATA DENOISING BY COMBINING SELF-SUPERVISED AND SUPERVISED LEARNING.....	1485
<i>Y. Sun, P. Williamson</i>	
A SIMULTANEOUS DENOISING AND EVENT-PICKING APPROACH USING SUPERVISED MACHINE LEARNING	1490
<i>S. Abbasi, M. Alfarraj, D. Borisov, V. Jayaram, I. Alam, B. Sarosh</i>	
MULTI-REALIZATION SEISMIC DATA PROCESSING WITH DEEP VARIATIONAL PRECONDITIONERS	1495
<i>M. Ravasi</i>	
U-NET BASED PRIMARY ALIGNMENT	1500
<i>R. Durall, A. Ghanim, N. Ettrich</i>	
AN AUTOMATED COST-EFFECTIVE 3D SURFACE-RELATED MULTIPLE ELIMINATION WORKFLOW	1505
<i>Z. Yan, S. Slaton, M. Vassallo, W. Sanger</i>	
MARCHENKO-BASED INTERNAL MULTIPLE ATTENUATION FEASIBILITY ANALYSIS FOR A THIN-LAYERED MEDIA IN ULTRA-SHALLOW WATER OBN FROM OFFSHORE MIDDLE EAST	1510
<i>F. De Melo, S. Chen, L. Salinas, S. Nakayama, N. Yamamoto</i>	
DEEP NONLINEAR SEISMIC PRIOR FOR SEISMIC INTERPOLATION	1515
<i>Y. Sui, J. Ma</i>	

PINNSLOPE: PHYSICS INFORMED NEURAL NETWORK SLOPE PREDICTION AND INTERPOLATION WITH POSITIONAL ENCODING.....	1520
<i>F. Brandolin, M. Ravasi, T. Alkhalifah</i>	
A CASE STUDY OF TORT MIGRATION IMAGING OF STRIKE-SLIP FAULTS IN MAHU AREA, JUNGGAR BASIN.....	1525
<i>H. Huang, D. Li, W. Chai, H. Gu, Y. Lv, Y. Wang, L. Huang, W. Luo</i>	
CAN TILE LOW-RANK COMPRESSION LIVE UP TO EXPECTATIONS? AN APPLICATION TO 3D MULTI-DIMENSIONAL DECONVOLUTION.....	1528
<i>Y. Hong, M. Ravasi, H. Ltaief, D. Keyes</i>	
SUB-SEAFLOOR REFLECTIVITY ESTIMATION BY UPGOING WAVEFIELD DECONVOLUTION.....	1533
<i>H. Masoomzadeh, T. Seher, M. Zuberi</i>	
DEBLENDING SEISMIC DATA USING MULTI-STAGE ITERATIVE SOURCE SEPARATION WITH PRIORS - A CASE STUDY USING STREAMER 3D DATA	1538
<i>W. Ibanez-Jacome, J. Hostetler, R. Kumar, W. Brouwer, S. Hydal, Y. Amin</i>	
DESIGNING SURVEYS IN AN UPDATED REGULATORY ENVIRONMENT – WITH CONSIDERATION OF PROCESSING.....	1543
<i>C. Udengaard, D. Brookes, S. Dean, S. Yong, H. Roende, D. Bate, E. Marc</i>	
MAXIMIZING IMAGING RESOLUTION AND AMPLITUDE FIDELITY OF LOW-DIP STRATIGRAPHIC TRAPS THROUGH CONTINUED OPTIMIZATION OF SEISMIC ACQUISITION AND PROCESSING: A CASE STUDY FROM THE GUYANA SOUTH EAST STABROEK BLOCK.....	1548
<i>Y. Tang, F. Song, L. Bear, M. Widmer, L. Wilson, V. Gudipati, R. Bansal, S. Knapp, C. Xia, W. Zhao, Y. Huang</i>	
MULTICOMPONENT SEISMIC DATA VECTOR RECONSTRUCTION VIA QUATERNIONIC MATRIX FACTORIZATION.....	1553
<i>Y. Fu, J. Gao, W. Sun, Y. Wang, F. Li</i>	
THE IMPACT OF ESTIMATED TEMPORAL AND SPATIAL VARIABILITY OF WATER LAYER VELOCITY ON THE CORRECTION OF OBS DATA.....	1558
<i>P. Scholtz, T. Nguyen, A. Jafargandomi</i>	
AN ADAPTIVE FILTER-BASED APPROACH FOR THE MARCENKO MULTIPLES ELIMINATION SCHEME	1563
<i>R. Santos, M. Souza, D. Revelo, V. Koehne, R. Pestana, D. Barrera, L. Vergne, J. Maciel</i>	
MARCENKO REDATUMING AND SEISMIC INTERFEROMETRY BASED INTERNAL MULTIPLE PREDICTION FOR SALT STRUCTURES	1568
<i>Z. Gu, J. Geng, R.-S. Wu</i>	
ACCURATE SEISMIC DATA INTERPOLATION BASED ON MULTIBAND INTELLIGENT TRAINING.....	1573
<i>X. Sun, B. Wang, T. Mo</i>	
UNSUPERVISED DEEP LEARNING FOR SEISMIC DATA RECONSTRUCTION	1578
<i>G. Chen, Y. Liu, M. Zhang</i>	
FIRST ARRIVAL ENHANCEMENT BY STATICS PRESERVING FILTERING USING SURFACE-CONSISTENT CONSTRAINTS	1583
<i>A. Quiaro, M. Sacchi</i>	

SEISMIC DATA INTERPOLATION BASED ON DIFFUSION MODEL DEEP LEARNING.....	1588
<i>S. Hou, C. Wang, Q. Zeng, D. Cui, Y. Yan, C. Zhang, Z. Zhang</i>	
ANGLE-CONSTRAINED VSP LEAST-SQUARES REVERSE TIME MIGRATION BASED ON A HIGH-EFFICIENCY STABILIZED POYNTING VECTOR.....	1593
<i>X. Ke, M. Sacchi, Y. Shi</i>	
IMPROVE KIRCHHOFF DEPTH IMAGING USING FULL WAVE EQUATION TRAVELTIMES.....	1598
<i>Y. Wang, Y. He, A. Yeh, F. Liu, B. Wang, C. Calderon</i>	
Q TOMOGRAPHY WORKFLOW: LAND CASE STUDY IN THE EAGLE FORD PLAY	1603
<i>I. Sharabi, M. Shustak, O. Klettenik-Edelman, R. Levy, Z. Koren</i>	
A NOVEL VECTOR PP IMAGING CONDITION FOR ELASTIC REVERSE TIME MIGRATION.....	1608
<i>B. Han, W. Mao, X. Xie</i>	
EXPLORING THE HORIZONTAL COMPONENT OF OBN SURVEYS FOR ADDED VALUE TO IMAGING	1613
<i>S. Omar, J. Simmons, C. Calderon</i>	
IMPROVEMENT OF INVERSE SCATTERING ANGLE-DOMAIN COMMON IMAGE GATHERS USING OPTICAL FLOW	1618
<i>A. Karsou, S. Da Silva, F. Capuzzo, F. Costa, J. Lopez, R. Moreira, M. Cetale</i>	
STACKING COMMON-IMAGE GATHERS VIA THE FLATTEN-ILLUMINATION- SIMILARITY METHOD	1623
<i>C. Wu, H. Wang, B. Feng, C. Ning, X. Tang</i>	
HYBRID STREAMER/SPARSE OBN IMAGING OFFSHORE NORWAY	1628
<i>C. Walker, Z. Zhou, X. Li</i>	
S-WAVE VELOCITY MODEL BUILDING USING PP-PS TOMOGRAPHY WITH DYNAMIC WARPING.....	1633
<i>T. Krishnasamy, R. Florendo, A. Nangarla, C. Undenggaard, P. Mazumdar, K. Searles, B. Olofsson, J. Gaiser</i>	
WAVE EQUATION TRAVELTIME KIRCHHOFF WITH REAL DATA APPLICATIONS	1638
<i>H. Jin, V. Bashkardin, P. Jilek, C. Kumar, H. Liu, J. Etgen, M. Vyas, G. Xia</i>	
COMPUTATIONAL GEOPHYSICAL ACQUISITION (CGA) AS AN ENabler OF GEOPHYSICAL SOLUTIONS	1643
<i>M. Zhang, Y. Li</i>	
RECENT ADVANCES, ROAD AHEAD: ACQUISITION, PROCESSING, AND INTERPRETATION IMPROVEMENTS IN USING LAND SEISMIC DATA FOR QI.....	1648
<i>C. Stork, J. Morgan</i>	
MULTI-SCALE INSIGHTS INTO THE MT WELD REE DEPOSIT FROM 2D AND 3D ACTIVE SEISMIC SURVEY DATA	1653
<i>T. Bell, G. Turner, G. Bhat, B. Knell</i>	
SPARSE 3D SEISMIC SURVEY OVER THE OLYMPIC DAM IOCG DEPOSIT.....	1658
<i>H. Schijns, J. Townsend, D. Haddow, M. Shawcross, K. Ehrig</i>	
CLASSIFICATION OF SEDIMENTARY BASINS	1663
<i>Z. Feng, D. Gao, S. Graham, G. Wu, T. Duan</i>	

SEDIMENTARY EVOLUTION OF THE SOUTHWESTERN TARIM BASIN DURING THE CRETACEOUS IN RESPONSE TO THE GEODYNAMICS OF THE TETHYAN OROGENY: IMPLICATIONS FOR PETROLEUM EXPLORATION	1668
<i>J. Chang, K. Liu, J. Liu</i>	
ENHANCING GEOSCIENTIFIC UNDERSTANDING THROUGH AUTONOMOUS MONITORING OF HYDROLOGICAL AND BIOGEOCHEMICAL PROCESSES WITH TIMELAPSE ELECTRICAL RESISTIVITY	1673
<i>R. Versteeg, D. Johnson, G. Partridge, R. Rubinstein, T. Turner, S. Kacur, M. Van Der Werf, M. De Kleine, S. Garre, G. Blanchy, D. Labrecque</i>	
JOINT INVERSIONS WITH THE SIMPEG FRAMEWORK	1678
<i>J. Capriotti, L. Heagy, S. Soler</i>	
PYSEIS: A HIGH-PERFORMANCE, USER-FRIENDLY PYTHON PACKAGE FOR GPU-ACCELERATED SEISMIC MODELING AND SUBSURFACE IMAGING.....	1683
<i>S. Farris, G. Barnier, E. Biondi, R. Clapp</i>	
ABSOLUTE AGE OF DEFORMATION AND DURATION OF FOLDING IN THE SOUTHERN PYRENEES FROM U-PB DATING OF CALCITE VEINS	1688
<i>D. Munoz-Lopez, A. Koeshidayatullah, D. Cruset, J. Verges, A. Trave</i>	
PARTICLE BASED MODEL FOR 2D SANDBOX / STRUCTURAL FORWARD MODELLING USING GAME ENGINE	1692
<i>E. Kusumah, D. Pasaribu</i>	
GEOPHYSICS APPLIED TO GEOTECHNICAL STUDY IN OURO PRETO, MG – BRAZIL – PART 2	1696
<i>G. Cardoso, M. Barbosa, L. Oliveira, J. Silva, R. Maia, J. Schiavon, F. Oliveira, P. Reis</i>	
POROSITY AND PERMEABILITY CALCULATIONS IN A BIOLITHITE USING X-RAY TOMOGRAPHY IMAGES	1700
<i>A. Aderemi, E. Charalampidou, Z. Jiang, E. Tudisco</i>	
TRANSITION TO ELECTRIC ECONOMY FROM HYDROCARBONS: LET US NOT TRADE ONE ENERGY DEPENDENCE WITH ANOTHER INSECURITY	1705
<i>N. Kumar</i>	
TIME-LAPSE ELECTROMAGNETIC WITH GRAMIAN.....	1710
<i>J. Ogunbo, S.-W. Kim, A. Enow</i>	
UNLOCKING DEEP LAYER OF PALEMBANG FORMATION WITH LOW RESISTIVITY RESERVOIR USING MODULAR DYNAMIC TESTER (MDT), PETROPHYSICAL APPROACH AND STIMULATION FRACTPACK IN MANGUNJAYA FIELD, SOUTH SUMATRA BASIN: SUCCESS STORY DEVELOPMENT WELLS DRILLED IN 2022.....	1715
<i>A. Samudra, Z. Ramadholi, D. Pramudito, R. Wicaksono, C. Putra, R. Ardianto</i>	
4D SEISMIC-GUIDED INJECTED VOLUME ESTIMATION: A PSEUDO-SKELETONIZATION APPROACH.....	1720
<i>J. Jorge, C. Agut, T. Blanchard, J. Granel, P. Thore</i>	
SUBSIDENCE MEASUREMENT AND IMPROVED STATICS SOLUTIONS THROUGH ACCURATE NODE DEPTH DETERMINATION DURING TIME-LAPSE DEEP-WATER OBN SURVEYS	1725
<i>P. Dutta, D. Kiyashchenko, K. Wang, A. Libak, E. Bergfjord, I. Grovik, R. Agersborg, H. Ruiz, A. Shen, D. Acuna, T. Noble</i>	

4D JOINT INVERSION AND “CLOSE-THE-LOOP” FOR PRODUCTION HISTORY MATCHING AND FORECASTING	1730
<i>K. Wrobel, J. Blangy, T. Rolland, E. Mutual, K. Rasmussen, W. Pardasie</i>	
INVERSE 4D SEISMIC TIMESHIFTS: HOW MUCH DO OUR RESERVOIRS REBOUND ?	1735
<i>J. Stammeijer, D. Mikulencak, C. Bao</i>	
JOINT 4D FULL-WAVEFORM INVERSION USING ENHANCED TEMPLATE-MATCHING OBJECTIVE FUNCTION.....	1740
<i>G. Dutta, E. Saragoussi, X. Cheng, M. Sourial, Y. Zhai, C. Parekh, D. Vigh</i>	
TIMELAPSE SEISMIC AT 29,000’: WHAT CAN WE LEARN ?.....	1745
<i>J. Stammeijer, P. Cornelisse, C. Gautre, P. Yu, J. Jimenez, P. Hatchell</i>	
TIME-LAPSE IMPEDANCE VARIATIONS USING DAS VSP DATA DURING CO2 INJECTION AT THE CMC NEWELL COUNTY FACILITY, ALBERTA, CANADA	1750
<i>Y. Wang, D. Lawton</i>	
EXPERIMENTAL SIMULATION OF ORGANIC MATTER TRANSFORMATION PROCESSES IN SOURCE ROCKS FROM BAZHENOV FORMATION (RUSSIA, WEST SIBERIA).....	1755
<i>D. Gafurova, A. Amao, A. Kalmykov, K. Al-Ramadan</i>	
FRACTURE CHARACTERIZATION IN SHALE AND TIGHT RESERVOIRS USING HORIZONTAL WELL SONIC LOGGING DATA.....	1760
<i>P. Liu, N. Li, H. Wu, H. Zhao, M. Zhang, H. Fan, K. Jiang, K. Wang, Y. Zeng</i>	
A DEEP LEARNING WORKFLOW FOR PETRO-MECHANICAL FACIES PREDICTIONS IN UNCONVENTIONALS.....	1765
<i>N. Vento, E. Liu, M. Johns</i>	
PETROPHYSICAL CHARACTERIZATION OF LOWER CRETACEOUS MARLY CHALK THROUGH 1H-NMR AND COMPLEX CONDUCTIVITY	1770
<i>E. Proestakis, L. Meireles, I. Fabricius</i>	
APPLICATION OF ARTIFICIAL INTELLIGENCE FOR SIMULTANEOUS WATER AND GAS CONING PROBLEMS IN HYDRAULICALLY FRACTURED TIGHT OIL RESERVOIR	1775
<i>M. Kumar</i>	
ADDING UNCERTAINTY TO THE ESTIMATION OF LOG DATA USING A GRADIENT- BOOSTED TREE APPROACH.....	1780
<i>M. Rauch, K. Gonzalez</i>	
EXPLORATION DETECTIVE STORIES: AUGMENTING SEISMIC WITH OTHER DISCIPLINES IN THE NIGER DELTA AND BRAZIL'S SERGipe & SOUTHERN SANTOS BASINS.....	1783
<i>W. Dickson</i>	
3D INSTALLATION OF FIBER CABLES FOR ACQUIRING 3C DAS ARRAY DATA.....	1787
<i>Y. Li, D. Li, L. Huang, Y. Zheng</i>	
ENABLING GRASSROOTS DIGITAL TRANSFORMATION WITH A PYTHON-EXCEL ML TOOLKIT.....	1792
<i>A. Silver</i>	
FULL WAVEFORM INVERSION DERIVED PRE-STACK REFLECTIVITY GATHERS	1797
<i>J. Mao, X. Cheng, D. Vigh, J. Xu, Q. Wu</i>	

SURVEY MERGING USING CYCLEGAN AND PATCHY SEISMIC IMAGES	1802
<i>C. Hu, F. Jiang, K. Osypov, J. Toms</i>	
THE EMERGENCE AND IMPACT OF SCIENTIFIC MACHINE LEARNING IN GEOPHYSICAL EXPLORATION	1807
<i>U. Waheed</i>	

Author Index