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TABLE OF CONTENTS

VOLUME 1

SUB-SALT EXPLORATION AND DEVELOPMENT

Application of Seismic Inversion Methods in Salt-exit Velocity Prediction	1
<i>N. Banik, I. Priezzhev, A. Koesoemadinata, V. Agarwal, K. Zou</i>	
Subsalt Interpretation for Deepwater Field Development	6
<i>C. Gereia, P. Prat, V. Clerget, R. Martin</i>	
Pushing the Boundaries - Sub-basalt Exploration in a Complex Crustal Environment	11
<i>A. Mantilla, A. Olaiz, M. Parsons, R. Yalamanchili</i>	
Improved Subsalt Imaging and Salt Interpretation Using Reverse Time Migration Scenario Testing and Image Partitioning	16
<i>M. O'Briain, D. Smith, C. Montoya, B. Burgess, S. Koza, O. Zdraveva, M. Ishak, R. King</i>	

IMPROVING IMAGING IN COMPLEX AREA – CASE HISTORIES

Recent Advances in Sub-BCU Processing and Imaging in the Central North Sea	21
<i>O.I. Pape, P. Fallon, J. Tatat, F. Varriale, S. Hollingworth, B. Duquet, X. Lu, E. McManus</i>	
North Sea Case Study for Enhanced Imaging Using a New Multimeasurement Towed Streamer	26
<i>C. Cunnell, M. Francis, C. Abu, M. Paydayesh, A. Imamshah</i>	
Enhanced 4D Imaging in West Africa Using High-resolution Tomography and Q-imaging	31
<i>J. Penwarden, M. Cavalca, A. King, S. Knapp, X. Meng, S. Mondziel</i>	
Imaging Enhancements in an Area with Complex Environmental and Geological Constraints - A Study from Offshore Trinidad	36
<i>N.R. Benfield</i>	

ROCK PHYSICS FOR HEAVY OIL, SHALES AND VOLCANICS

Rock Physics Modeling for Shale Gas Formation Characterization in China	41
<i>G. Yu, Y.S. Zhang, P. Newton, I. Azizov</i>	
Changes in Microstructure and Elastic Properties of Mancos Shale after Pyrolysis	46
<i>N. Patrusheva, M. Pervukhina, M. Lebedev, J. Dautriat, D.N. Dewhurst</i>	
A Rock Physics Model for Estimating Elastic Properties of Organic Shales	51
<i>K. Qian, F. Zhang, X.Y. Li, Y. Wang, Y. Liu</i>	
Comparison of P- and S-wave Velocities in a Transversal Isotropic Sandstone and a Shale under Uniaxial Loading Condition	56
<i>S.I. Mayr, V. Sviridov, S.A. Shapiro</i>	
Modelling P-wave Velocity in Heavy-oil Sandstone and Its Application	61
<i>W.S. He, Y. Ling, X.Y. Guo, L.B. Zhang, Z.X. Wang</i>	
Use of Field Observations and X-ray Computed Tomography to Characterise Volcanic Reservoir Analogues	66
<i>C.R. Couves, S. Roberts, A.I. Best, A. Racey, I. Troth, L.J. North</i>	
Relationships Between Resistivity Anisotropy and Microstructure of Volcanic Reservoir Rocks	71
<i>L.J. North, C. Couves, A.I. Best, J. Sothcott</i>	
Reflection and Transmission Responses of a Periodic Layered Medium Constituted by Shales and Patchy Saturated Sands	76
<i>B. Dupuy, A. Stovas</i>	

SOURCE ROCKS AND PETROLEUM SYSTEMS

Impact of the Agulhas Falkland Transform Fault on the Petroleum System of Three of its Neighboring Basins	81
<i>M. Marishane, A.J. Dubois, A. Carrillat, E.A. Charlies, T. Van Rensburg, W. Sanchez, P.T. Gomez Cabrera, R.D. Cuevas Waltero, T. McDonald, G. Skosana</i>	
Deepwater Papua New Guinea - Evidence for a Working Petroleum System	86
<i>J.D. Huuse, C. Palmer, V. Cole</i>	
Integrated Assessment of Risks Associated with Exploration Offshore Eastern Canada	91
<i>G.D. Wach, R.L. Silva, C.H. Dickson, L. Eliuk, N. Morrison, N. Plummer, C. Wong, D. O'Connor, T. Campbell, T. Kelly, Y. Kettanah</i>	
Geochemical Features of Organic Matter of the Bazhenov Formation	96
<i>O.V. Kostenko, N.P. Fadeeva, G.A. Kalmykov, E.N. Poludetkina</i>	

SEISMIC IMAGING – CASE STUDIES II

Resolution of Internal Basalt Structures Offshore Sri Lanka	101
<i>N. Stevens, V. Valler, J.K. Fruehn, S. Adhikari, S. Sarkar, P. Chatterjee, C.G. Rao, P. Kumar, P. Routray</i>	

Broadband Velocity Model Building and Imaging Using Reflections, Refractions and Multiples from Dual-sensor Streamer Data	106
<i>G. Ronholt, J.E. Lie, O. Korsmo, B. Danielsen, S. Brandsberg-Dahl, S. Brown, N. Chemingui, A. Valenciano Mavilio, D. Whitmore</i>	
Multiparameter Full Waveform Inversion on Long-offset Broadband Acquisition - A Case Study	111
<i>D. Vigh, X. Cheng, K. Jiao, D. Sun, J. Kapoor</i>	
Integration of Surface Seismic and Well Information to Improve Drilling Success for Onshore Carbonate Caves	116
<i>H.X. Shi, G.X. Peng, D.M. Zheng, L.J. Zhang, H. Li, G.H. Li, P.F. Yang, W.S. Duan, M. Chen, H. Zhang, S. Yang, P. Wang, F.J. Xue, X. Liu</i>	

SEISMIC MULTIPLE ATTENUATION III

Enhancing 3D SRME to Stop Complex Continental Shelf Slope Topography Obscuring the Seismic Signal	121
<i>C.E. Jones, J.I. Selvage, G. Ronholt, J. Wright, S. Naumann, E.E. Beeching, Z. Grepłowski, M. Ciotoli, D. Harrison-Fox</i>	
One Way for Modelling Primaries and Internal Multiples with the Two-way Wave Equation and Its Collateral Benefits	126
<i>A.L. Pica</i>	
Free Surface Multiples Simulation with Mirror Image Method	131
<i>T. Liu, L. Li, X. Wei, Y. Ji, L. Jia</i>	
Multiple Contribution Traveltime Equation in the MCG Domain	136
<i>Y. Nae, A.K. Takahata, R.R. Lopes, J.M.T. Romano</i>	

MARCHENKO IMAGING

Autofocusing for Retrieving the Green's Function in the Presence of a Free Surface	141
<i>S. Singh, R. Snieder, J. Behura, J. van der Neut, K. Wapenaar, E. Slob</i>	
Marchenko Imaging Below an Overburden with Random Scatterers	146
<i>K. Wapenaar, J. Thorbecke, J. van der Neut, I. Vasconcelos, E. Slob</i>	
An Interferometric Interpretation of Marchenko Redatuming	151
<i>J. van der Neut, I. Vasconcelos, K. Wapenaar</i>	
Elastic Autofocusing	156
<i>C.A. da Costa, M. Ravasi, G. Meles, A. Curtis</i>	

APPLICATIONS OF SEISMIC (TIME-LAPSE) INTERFEROMETRY

Passive Seismic Interferometry and Anisotropic Eikonal Phase-velocity Tomography with Examples from Ekofisk Field	161
<i>S. de Ridder, B. Biondi, D. Nichols</i>	
Treating Active Data As Noise - Low-frequency Surface Wave Inversion Using SPAC	167
<i>W. Kimman, I. Barone, M. Bachschmidt, P. Vermeer</i>	
Passive Time-lapse of Valhall Subsurface From Correlation of Ambient Seismic Noise	172
<i>A. Mordret, N.M. Shapiro, S. Singh, P. Roux</i>	
Time-lapse Monitoring of Localized Weak Changes with Multiply Scattered Waves and Laboratory Tests	177
<i>C.O. Kanu, R. Snieder, E. Niederleithinger</i>	

FLOW MODELLING IN FRACTURED RESERVOIRS

Natural Fracture Prediction for Discrete Fracture Modelling	182
<i>H. Phillips, J.P. Joonnekindt, L. Maerten</i>	
Why Hydraulic Stimulation of Reservoirs at Large Depths is Shear Dominated	187
<i>T. Backers</i>	
Surface Movement Induced by Geothermal Operations	192
<i>P.A. Fokker, J.D. Van Wees</i>	
Seismic Mapping and Geomechanical Analyses of Faults within Deep Hot Granites, Workflow for Enhanced Geothermal Systems	197
<i>H. Abul Khair, D. Cooke, M. Hand</i>	
Integrating Discrete Fracture Models for Static and Dynamic Calibration of Fractured Reservoirs	202
<i>M. Ahmed Elfeel, S. Agada, C. Maier, S. Geiger</i>	
An Integrated Study of Cleanup Efficiency of Short Hydraulic Fractured Vertical Wells Using Response Surface Methodology	207
<i>H.R. Nasriani, M. Jamiolahmady, E. Alajmi</i>	
Novel Near Wellbore Rock Typing and Upscaling Workflow to Improve Reservoir Characterisation and Modelling of Carbonates	212
<i>V. Chandra, A. Barnett, P.V. Wright, R. Steele, S. Geiger, P.W.M. Corbett, P. Milroy</i>	
Analytical and Numerical Analysis of Matrix-Fracture Exchanges through Diffusion Mechanisms in Fractured Reservoirs	217
<i>P. Duperay, O. Gosselin</i>	

EVALUATION AND PRODUCTION IN UNCONVENTIONAL RESERVOIRS

3D Seismic Technology and Its Application in the Exploration of Coalbed Methane in China	222
<i>Z.Y.S. Zhang</i>	
Reservoir Bed Characteristics of Lower Silurian Longmaxi Formation Shale in the Southeast Yu Area, Southwest China	227
<i>Y. Wang, L. Liu</i>	
A Rock and Fluid Study of Middle Bakken Formation: Key to Enhanced Oil Recovery	232
<i>B.K. Kurtoglu</i>	
A Multi-Scale Study of Bakken - Petroleum Geology and Reservoir Performance Analysis	237
<i>B.K. Kurtoglu</i>	
The Marine Shale Gas-rich Zones Geophysical Prediction and Evaluation Techniques in South China	242
<i>Z.Y.S. Zhang</i>	
Pores Characterization of Jurassic Continental Shale in the Tarim Basin, Northwest China	247
<i>Y. Wang, L. Liu, X. Gao</i>	
The Geophysical Prediction of TOC in Shale Reservoir	252
<i>J.W. Liu</i>	
Petrophysical Evaluation of Unconventional Najmah Formation of Kuwait - A Case Study	257
<i>B. Khan, O. Nohut, M. Van Steene, A. Abu Ghneej, A. Al Ajmi</i>	

SEISMIC INTERPOLATION AND REGULARISATION

Comparison of 3D Time-domain Radon and Matching-pursuit Fourier Interpolation	262
<i>M.A. Schonewille, D.M. Dishberger, D. Kapadia</i>	
A Study of Different Greedy Algorithms for Crossline Wavefield Reconstruction Using Multimeasurement Towed Marine Data	267
<i>Y.I. Kamil, P.W. Kitchenside, M. Vassallo, A. Özbek</i>	
Low-rank Promoting Transformations and Tensor Interpolation - Applications to Seismic Data Denoising	272
<i>C. Da Silva, F.J. Herrmann</i>	
SVD-free Low-rank Matrix Factorization - Wavefield Reconstruction Via Jittered Subsampling and Reciprocity	277
<i>R. Kumar, A.Y. Aravkin, E. Esser, H. Mansour, F.J. Herrmann</i>	
Regularization of Simultaneous Long Offset Data Acquired Offshore Gabon - A Case Study	282
<i>D. Koenitz, A. Klaedtke, R.F. Hegge</i>	
Least-squares Seismic Data Mapping and its Application in Seismic Data Regularization	287
<i>Y. Liu, Z. Li, X. Liu, D. Wu</i>	
New Efficient Interpolation Approach to Insufficient 3D Field Data	292
<i>B. Kim, S. Jeong, J. Byun, Y.C. Kim</i>	
Fast Progressive Sparse Tau-P Transform for Regularization of Spatially Aliased Seismic Data	297
<i>K. Nimsaila, P. Wang</i>	

SEISMIC ATTENUATION

Estimating Q-factors by Varying the Source Strength	302
<i>M. Landro, F.G. Jakobsen</i>	
Stable Q Analysis on Vertical Seismic Profiling Data	307
<i>Y. Wang</i>	
A New Method for Q Estimation Based on the Logarithmic Spectral Area-difference	312
<i>S.D. Wang, D.F. Yang, J.N. Li, H.J. Song, H.J. Yin</i>	
Adaptive Centroid Frequency Shift Q Tomography	317
<i>K. Xin, Y. Xie, Y. He</i>	
Approximations for Johnson's Model and Its Viscoelastic Approach	322
<i>Y. Ling, L.G. Han, S.Q. Zhang, Y.G. Wu</i>	
Improved Spectral Estimates for Attenuation Studies	327
<i>J. Beckwith, R.A. Clark</i>	
Conventional Seismic Modelling Study of Attenuation and Dispersion in Patchy Saturation Porous Media	332
<i>X. Li, L. Dong</i>	
Lagrangian Constitutive Model for Bitumen Sands	337
<i>W. Deng, I.B. Morozov</i>	

FWI – NEAR SURFACE AND ELASTIC APPLICATION

Generic Gradient Expression for Robust FWI of Surface Waves	342
<i>I. Masoni, R. Brossier, J.L. Boelle, J. Virieux</i>	
A Waveform Inversion Strategy for Surface Wave Analysis in the Presence of High Velocity Contrasts	347
<i>C.A. Pérez Solano, D. Donno, H. Chauris</i>	
Integrating FWI with Surface-wave Inversion to Enhance Near-surface Modelling in a Shallow-water Setting at Eldfisk	352
<i>E.J. Wiarda, S.A. Shaw, D. Boiero, A. Gundersen, L.R. West</i>	

Effect of Free-surface Related Multiples on Near Surface Velocity Reconstruction with Acoustic Frequency Domain FWI	357
<i>K. Gadyilshin, A. Bakulin, M. Dmitriev, P. Golikov, D. Neklyudov, V. Tcheverda</i>	
Retrieving Elastic Parameters from Short Offset Geometry Acquisition	362
<i>J.A. Kormann, J.E. Rodriguez, N. Gutierrez, J. De la Puente, M. Hanzich, J.M. Cela</i>	
A New Parameterisation with Poissons Ratio for Multi-parametric FWI in Isotropic Elastic Media	367
<i>J.W. Oh, D.J. Min</i>	
Elastic Full Waveform Inversion for Land Walkaway VSP Data from British Columbia, Canada	372
<i>O. Podgornova, S. Leaney, M. Charara, E. von Lunen</i>	
Non-linear Full Wavefield Inversion Applied to Carboniferous Reservoirs in the Wingate Gas Field (SNS, Offshore UK)	377
<i>A. Gisolf, R. Huis in't Veld, P. Haffinger, C. Hanitzsch, P. Doulgeris, P.C.H. Veeken</i>	

FWI – CASE STUDIES

Refraction Full-waveform Inversion in a Shallow Water Environment	382
<i>Z. Zou, J. Ramos-Martinez, S. Kelly, G. Ronholt, L.T. Langlo, A. Valenciano Mavillio, N. Chemingui, J.E. Lie</i>	
Building a High-resolution Model with Full Waveform Inversion in Deep Water West Africa	387
<i>H. Zhu, N. Chazalnoel, W. Zhao</i>	
Full Waveform Inversion on Jackdaw Ocean Bottom Nodes Data in North Sea	392
<i>K. Yoon, P. Moghaddam, I. Vlad, M. Warner, J. Sheng</i>	
Waveform Inversion of Sparsely Sampled Data over a Shallow Gas Area	397
<i>F.A. Maaß, C. Ravaut, Ø. Pedersen</i>	
Full Waveform Inversion - A North Sea OBC Case Study - Reloaded	402
<i>A. Ratcliffe, G. Conroy, V. Vinje, A. Bertrand</i>	
Improved Imaging in the Santos Basin with Full Waveform Inversion	407
<i>O.H. Kirstetter, A. Guitton</i>	
Using Reflection Data for Full Waveform Inversion - A Case Study from Santos Basin, Brazil	412
<i>R. Kumar, B. Bai, Y. Huang</i>	
Full Waveform Inversion on the NW Shelf of Australia	417
<i>C.D. Manuel, G. Hampson, D. Chagalov, D. Bevc, T. Xu, B.J. Lim, D. Vigh</i>	

FRACTURE DETECTION FROM SEISMIC ATTRIBUTES

Fracture Detection Using Dip-steered Multichannel Correlation Based Coherence Method	422
<i>Y. Liu, Y. Wang</i>	
Fracture Corridors Detection through Seismic Cube Directional Decomposition	427
<i>H.S. Li, Q.F. Zhang, W.Y. Yang, X.S. Yong</i>	
Characterization of the Fractures by Mathematical Morphology	432
<i>A. Xavier, C. Guerra, A. Andrade</i>	
Interpretation of Complex Faulted Deposits in the North Sea Using a Relative Geological Time Model	437
<i>N. Daynac, S. Lacaze, M. Mangué, F. Pauget</i>	
Sub-seismic Fault Detection Using Horizon-based Seismic Attributes	442
<i>M.S.D. Manzi</i>	
Towards a Systematic and Sequential Search for Open Fractures in Seismic Data	447
<i>R. Alai, A.A. Agrawi, A.B. Mohamed, M.T.A. Taha</i>	
Seismic Attribute Analysis for Mapping of Fracture Zones in Coal-bearing Formations	452
<i>I. Mendrii, M. Dovbnich</i>	
Identifying Fracture and Vuggy Systems in Carbonate Reservoirs Using Curvature Attributes	457
<i>S.H. Yuan, Z.H. Wan, J.B. Cui, X.L. Bai, L.H. Dai, J.Y. Zhao, H.G. Xin</i>	

MICROSEISMIC – LOCATION AND INVERSION

True Amplitude Stacking for Moment Magnitude Estimation of Microseismic Events	462
<i>R. Cieplicki, L. Eisner, M. Mueller, F. Stanek</i>	
Analysis of the Stability of Source Mechanism Solutions for Microseismic Events from Different Receiver Configurations	467
<i>X.P. Zhao, J.R. Reyes-Montes, R.P.Y. Young</i>	
Locating Microseismicity from Surface Monitoring Arrays Using Grid Search and Hypocenter Inversion - A Case Study	472
<i>J.W. Huang, J.M. Reyes-Montes, R.P. Young</i>	
Microseismic Event Localization by Pairwise Cross-correlation Diffraction Stacking	477
<i>O. Zhebel, D. Gajewski, C. Vanelle</i>	
Anisotropic Ray-waveform Moment Tensor Inversion	482
<i>W.S. Leaney, C.H. Chapman</i>	
Migration-based Location Method Applied to a Perforation Shot Using LoFS Data at the Ekofisk Field, Norway	487
<i>V. Oye, K. Iranpour, T. Kverna, S. Gibbons, L. Vedvik, H.H. Nielsen</i>	

Tomography of a Velocity Model and Location of Microseismic Events with P, Sv and Sh Waves	492
<i>M. Chmiel, T. Bardainne</i>	
Layered HTI Model Building for Microseismic Monitoring Applications	497
<i>S.V. Yaskovich, A.A. Duchkov</i>	

SEISMIC NOISE ATTENUATION

3D Surface-wave Estimation and Separation Using a Closed-loop Approach	502
<i>T. Ishiyama, G. Blacquièrè, D.J. Verschuur</i>	
Attenuation of Turn Noise in Marine Towed Streamer Data with an Anti-leakage Tau-P Method	507
<i>C. Peng</i>	
Cooperative Noise Attenuation in a Complex Wavelet Transform Domain	512
<i>C. Peng, R. Huang</i>	
Toward an Automatic Swell Noise Attenuation Process	517
<i>M. Bekara</i>	
Strategies for Complex Thresholding in Curvelet-based Data Denoising	522
<i>A. Górszczyk, M. Malinowski, A. Adamczyk</i>	
Improved Multiples and Noise Attenuation by Applying the Wavelet Tau-P Deconvolution	527
<i>L. Wang, D. Davies, M. Ibram</i>	
How to Teach a Neural Network to Identify Seismic Interference	532
<i>S. Rentsch, M.E. Holicki, Y.I. Kamil, J.O.A. Robertsson, M. Vassallo</i>	
Efficient Land Seismic Acquisition Sampling Using Rotational Data	537
<i>P. Edme, E. Muyzert, E. Kragh</i>	

BROADBAND ACQUISITION AND PROCESSING II

Broadband Processing of West of Shetland Data	542
<i>R. Telling, N. Riddalls, A. Azmi, S. Grion, G. Williams</i>	
Quantification of Wavefield Reconstruction Quality from Multisensor Streamer Data Using a Witness Streamer Experiment	547
<i>L.P. Letki, C. Spjuth</i>	
Deghosted Least-squares RTM - Image Domain Broadband Solution for Complex Structures	552
<i>S. Dong, C. Zeng, H. Masoomzadeh, B. Wang</i>	
Joint Crossline Reconstruction and 3D Deghosting of Shallow Seismic Events from Multimeasurement Streamer Data	557
<i>Y.I. Kamil, M. Vassallo, W. Brouwer, D. Nichols, M. Cowman, A. Özbek</i>	
Combining Deblending with Source Deghosting	562
<i>A.J. Berkhout, G. Blacquièrè</i>	
Simulating Ultra-deep-tow Marine Seismic Data for Receiver Deghosting	567
<i>R. Ferber, C.J. Beasley</i>	
Slanted-streamer Data-adaptive Deghosting with Local Plane Waves	572
<i>J.E. Rickett, D.J. van Manen, P. Loganathan, N. Seymour</i>	
Ghost Compensation and Impedance Estimation from Kirchhoff and Beam Migration	577
<i>G. Roberts, L. Duan, A. Ratcliffe, Y. Zhang</i>	

SIMULTANEOUS SOURCE ACQUISITION, PROCESSING AND INTERPRETATION

Eliminating Blending Noise Using Fast Apex Shifted Hyperbolic Radon Transform	582
<i>A. Ibrahim, M.D. Sacchi</i>	
Deblending Via Sparsity-constrained Inversion in the Focal Domain	587
<i>A. Kontakis, D.J. Verschuur</i>	
Simultaneous Source Separation Using Encoded Source Sequences	592
<i>M.B. Mueller, J.O.A. Robertsson, D.F. Halliday</i>	
Simultaneous Sources - Continuous Acquisition and Processing for Marine Data	597
<i>I. Moore</i>	
Blended Dual-source Acquisition and Processing of Broadband Data	602
<i>G. Poole, K. Stevens, M. Maraschini, T. Mensch, R. Siliqi</i>	
Imaging a Mature Oil Field Using Simultaneous Source Technology - the Processing of the Iraq Rumaila ISSN Survey	607
<i>M. Dvorak, K. Tough, M. Eller, M. Smith</i>	
An Interpreter's View on 4D with Simultaneous-source Undershoot	612
<i>P. Sabel, F. Büker, C. Otterbein, B. Szydlik, I. Moore, C. Beasley</i>	
Cross Interference Noise Attenuation Using Alpha-trimmed Vector Median Filtering	617
<i>W.C. Wang, H.Q. Li, B. Zhao, G.A. Luo, X.D. Zhang, H.Y. Guo</i>	

SEISMIC ACQUISITION II

Fundamentals of Vibration Sensing with Distributed Fibre Optic Sensors through Downscaled Experiments	622
<i>B. Papp, D. Donno, J.E. Martin, A.H. Hartog</i>	
A Comparison of Trenched Distributed Acoustic Sensing (DAS) to Trenched and Surface 3C Geophones - Daly, Manitoba, Canada	627
<i>R. Kendall</i>	
Optimizing Illumination Using Multiples - Application to Seismic Acquisition Analysis	632
<i>A. Kumar, G. Blacquiére, D.J. Verschuur</i>	
Variable-Depth Streamer Survey Design and Seismic Modelling - Martin Linge Case Study	637
<i>C. Sagary, J. Morante-Gout, G. Mikkelsen, P. Dervieux</i>	
3D OBC Survey Design Based on Sampling of OVTs	642
<i>S. Nakayama, M.A. Benson, A. Al-Khamiri, K. Belaid, G. Mercado</i>	
Vertical Cable Seismic (VCS) Survey for Seafloor Massive Sulphide (SMS) Exploration	647
<i>E. Asakawa, F. Murakami, H. Tsukahara, S. Mizohata</i>	
Marine Acquisition Using Wave Gliders: A Field Feasibility Test	652
<i>N. Moldoveanu, A. Salama, O. Lien, E. Muzert, S. Pai, D. Monk</i>	
Blended Source - the Future of Ocean Bottom Seismic Acquisition	657
<i>C.D.T. Walker, D.J. Monk, D.B. Hays</i>	

EXECUTIVE SESSION ON CAN RESOURCE PLAYS BE SWEET-SPOTTED?

Developing Energy Infrastructure in the UK - The Underpinning Role of the British Geological Survey	662
<i>J.N. Ludden, M. Stephenson</i>	

TIME-LAPSES SEISMIC PROCESSING

Time- and Frequency-domain Metrics for the Evaluation of Full-aperture, Time-lapse Data from Multi-sensor Streamers	667
<i>B. Szydlík, K. Eggenberger, P.A.F. Christie</i>	
Time-lapse Anomalies Reconstruction via Joint Inversion of Direct Waves and Reflection Images	672
<i>I. Abakumov, D.A. Kiyashchenko, B.M. Kashtan</i>	
An Efficient 4D Processing Flow for Variable-depth Streamer Data	677
<i>E. Hicks, H. Hoerber, G. Poole, B. King</i>	
Frequency Bands Separation for 4D Monitoring	682
<i>B. de Cacqueray</i>	
Hierarchical Bayesian Inversion of Time-Lapse Seismic Data with Different Acquisition Geometries	687
<i>S.A. Zamanian, D. Yang, W.L. Rodi, M.C. Fehler</i>	
4D Result Enhancement with Crosscorrelation-based Time-lapse Static Correction at Ketzin, Germany	692
<i>P. Bergmann, A. Kashubin, M. Ivandic, S. Lüth, C. Juhlin</i>	
Time-lapse Seismic without Repetition - Reaping the Benefits from Randomized Sampling and Joint Recovery	697
<i>F. Oghenekohwo, E. Esser, F.J. Herrmann</i>	
Improving 4D Seismic Imaging by Modifying Baseline Depth Migration Velocity Model	702
<i>G. Chen, D. Chu, M. Helgerud, D. Chang, I. Gorysheva, G. Palacharla, S. Zantout, S. Dewberry, C. Trantham, T. Leveque, D. Hernandez, O. Contreiras, A. Hohrath, D. Johnston, E. Hodges</i>	

ADVANCES IN NEAR SURFACE GEOPHYSICS

Parametric Inversion of Brillouin Spectra to Enhance the Accuracy of Distributed Strain Measurement	707
<i>E. Buchoud, J. Mars, V. Vrabie, G. D'urso, S. Blairon, J.M. Henault, A. Girard</i>	
The Relationship of Soil-moisture Saturation and Time-lapse Static Shifts - An Example from the Ketzin Pilot Site	712
<i>P. Bergmann, M. Ivandic, A. Kashubin, S. Lüth, A. Ivanova, C. Juhlin</i>	
Integrated Method for Characterizing Gas Shallow Hazards	717
<i>F. Pivot, E. Cauquil, J. Contet</i>	
Site Seismic Analysis and Risk Management in Industrial Areas	722
<i>M. Ciucci, A. Marino, A. Rinaldini, A. Marino</i>	

RTM - THEORY

Surface-offset RTM Gathers - What Happens When the Velocity is Wrong?	727
<i>J.P. Montel</i>	
RTM Noise Attenuation and Image Enhancement Using Time-shift Gathers	732
<i>A. Khalil, J. Sun, Y. Zhang, G. Poole</i>	
Phase-encoded Inversion Using Randomised Sampling	737
<i>C.L. Leader, A. Almomin, R. Clapp</i>	
Beyond Conventional Migration - Nonlinear Subsalt Imaging with Transmissions and Two-sided Illumination	742
<i>M. Ravasi, I. Vasconcelos, A. Curtis</i>	

Accelerating True-amplitude RTM of Deepwater Data Using Analytic Redatuming	747
<i>Y. Qin, M. Okoniewski</i>	
Local Angle Domain Elastic Reverse Time Migration in TI Media	752
<i>C.L. Wang, J.B. Cheng, T.F. Wang</i>	
Wave Equation Processing and Imaging of Marine Multicomponent Data Beyond Traditional RTM	757
<i>L. Amundsen, J.O.A. Robertsson, Ø. Pedersen</i>	
Separated Wavefield Imaging (SWIM) of Complex Structures	762
<i>A. Valenciano, S. Crawley, E. Klochikhina, N. Chemingui, S. Lu, D. Whitmore</i>	

VELOCITY ANALYSIS - THEORY

Extended Images in Action - Efficient WEMVA Via Randomized Probing	767
<i>R. Kumar, T. van Leeuwen, F.J. Herrmann</i>	
Wave-equation Common Image Gathers and their Combination with Nonlinear Ray-based Tomography	772
<i>D. Lokshantov, S. Langman, E. Kurin</i>	
Velocity Analysis Using Similarity-weighted Semblance	777
<i>T.T. Liu, Y.K. Chen, X.H. Chen, C. Ma</i>	
Frequency Scaling for Angle Gathers	782
<i>M.A.H. Zuberi, T. Alkhalifah</i>	
Quantitative Migration for a More Robust Migration Velocity Analysis	787
<i>C.A. Lameloise, H. Chauris</i>	
Inversion to Common Scatterpoint Gathers and its Application in Time-domain Velocity Analysis and Imaging	792
<i>Y. Liu, Z. Li, X. Song, K. Zhang</i>	
Prestack Migration Velocity Analysis Using Time-remigration Trajectories	797
<i>T.A. Coimbra, H.B. Santos, J. Schleicher, A. Novais</i>	
On the Use of Smooth Velocities in Ray-based Stacking and Time-migration	802
<i>L.J. Gelius, M. Tygel</i>	

BUILDING AND UPDATING OF SUBSURFACE 3D MODELS

Machine-learning Based Automated Fault Detection in Seismic Traces	807
<i>C. Zhang, C. Frogner, M. Araya-Polo, D. Hohl</i>	
Establishing 3D Numerical Reservoir Analogues - Modelling the Formation of Sand Bodies in Deltaic Environments	812
<i>H. van der Vegt, J.E.A. Storms, D.J.R. Walstra</i>	
Reservoir Model Estimation by Simultaneous Optimization of Multiple Objective Functions	817
<i>M. Emami Niri, D. Lumley</i>	
How Big an Elephant Can Be	822
<i>A. Mannini, S. Pearse</i>	
Understanding Risk in the Browse Basin - A Shared Earth Model Approach	827
<i>E. Collins, R. Martin, N. Harvey, A. Lavender</i>	
Lithological, Grain-size and Architectural Trends in the Holocene Rhine-Meuse Delta - Insights from 3D Voxel Models	832
<i>J. Stafleu, F.S. Busschers</i>	
Role of High Resolution Sequence Stratigraphic Analysis in Reservoir Characterization of Najmah-Sargelu Fm, Kuwait	837
<i>A. AlShamali</i>	
Understanding Fluvial Architecture in Modern Desert Systems - Key to Modelling Rotliegend Reservoir Geometries	842
<i>M. Felder, E. Van de Graaff</i>	

DEDICATED – THE USE OF PRODUCTION DATA IN THE GEOLOGICAL MODEL

History Matching Deltaic Reservoir Models Controlled by Realistic Sedimentological Prior Information	847
<i>T.S. Rojas, V. Demyanov, M. Christie, D. Arnold</i>	
Reservoir Model Calibration through Numerical Well Testing	852
<i>S. Zheng</i>	
Understanding Rock Fabric Heterogeneity for Hydraulic Fracturing In the Montney Shale Gas-pouce Coupe	857
<i>C.J. Duenas, M. Lee, T. Davis, D. D'Amico</i>	

VOLUME 2

Geostatistical History Matching Conditioned to Seismic Data	862
<i>L. Azevedo, S. Focaccia, A. Soares</i>	
Geologically Realistic Priors for History Matching	867
<i>D. Arnold, M. Christie, V. Demyanov</i>	

Channelized Reservoirs Characterization Using Ensemble Smoother with Selective Measurement Data	872
<i>K. Lee, S. Kim, S. Jung, H. Shin, J. Choe</i>	
Geologically Realistic Facies Updates for a North Sea Field	877
<i>R.G. Hanea, T. Ek, B. Sebacher, J. Sætrum, D.B. Sollien</i>	
Conditioning Static Models with Connectivity Information	882
<i>M. Bourges, J.M. Chautru, H. Binet, R. Meunier</i>	

OPTIMISATION APPROACHES APPLIED TO GEOMODEL AND RECOVERY

Parameterization Using Sensitivity Methods for Global History Matching Techniques	887
<i>B. Al-Shamma, O. Gosselin, P. King</i>	
Sequential Bayesian Optimization Coupled with Differential Evolution for Geological Well Testing	892
<i>H. Hamdi, Y. Hajizadeh, J. Azimi, M. Costa Sousa</i>	
Synthetic Property of Oil and Gas Fields for Horizontal Wells Trajectory Design	897
<i>V.P. Gryshanenko, A.P. Tyshchenko</i>	
Effect of Project Life Time on Well Placement Optimization	902
<i>O. Mutrif Siddig, A. Awotunde, A. Hashim Ahmed, M.S. Jamal</i>	
Squeezing Out the Oil of Jirak Field-Indonesia - an Integrated Geology & Production Study for Waterflood Project	907
<i>G. Stephani, A. Badril, R. Widayanto, N. Handayani</i>	
Application of Cyclic Shut-in Method to Increase Gas Production with Subsea Pipeline and Riser Inclination	912
<i>S. Kim, K. Lee, H. Shin, K. Jo, M. Ryu, J. Choe</i>	
Improve Oil Recovery Strategies with Secondary Recovery Stage in Brown Field of Clastic Limestone Formation in Jatibaran	917
<i>A. Areza, A. Syaifuddin, P. Suarsana</i>	
Gas Recycling Optimization in Wet Gas Reservoir Considering Condensate Banking Effect Using Pseudo-Pressure - Case Study	922
<i>L. Monghad, S.S. Ghorashi, S.M. Motahari, M. Bakhtbidar</i>	

SEISMIC MODELLING IV

Numerical Modeling of Responses from Fluid-filled Macrofractures with Boundary Conditions Specified on Fracture Surfaces	927
<i>V.B. Leviant JSC, I.B. Petrov, I.E. Kvasov, M.V. Muratov</i>	
Elastic Wave Equation Rotated-Grid Forward Modeling and Imaging Based on Wave Separation Method	932
<i>W.Z. Wang, Z. Qin, T. Hu, Y.D. Li, Y. Zhang</i>	
A Frequency-domain Seismic Modeling Engine for 3D Visco-acoustic VTI Full Waveform Inversion of Fixed-spread Data	937
<i>S. Operto, R. Brossier, L. Combe, L. Métivier, A. Ribodetti, J. Virieux</i>	
Chebyshev Expansion Applied to the One-step Wave Extrapolation Matrix	942
<i>R.C. Pestana</i>	
Improvements on Optimal Finite Difference Schemes for Frequency-space Domain 2-D Scalar Wave Extrapolator	947
<i>W. Liu, Z. Hu, L. Han</i>	
A Discontinuous Galerkin Method for P-wave Modeling in Tilted TI Media	952
<i>T.G. Amler, T. Alkhalifah, I. Hoteit</i>	
Evaluating the Performance of Band-limited Ray Tracing Through Simple and Complex Synthetic Models	957
<i>J. Chen, C.E. Yarman, X. Cheng</i>	
Windowed Method for Finite-difference Modelling and its Application to Wave-equation Tomography	962
<i>A.S. Serdyukov, A.A. Duchkov</i>	

GETTING THE BEST OF SEISMIC FOR RESERVOIR CHARACTERIZATION

Case Study - Use of a Simple Geophysical Attribute -Fast Track Method- for Geological Modeling	967
<i>T.K. Tyagi, M.P. Perruchot, P. Turpin</i>	
Hydrocarbon and Lithology Indicators by Coordinate Rotations in the AI-Vp/Vs Domain	972
<i>G. Cavanna, A. Castoro, M. Fervari</i>	
Gas Saturated Reservoirs Characterization in Case of Coal Beds Presence (South Tambeyskoe Field Case Study)	977
<i>A.A. Rzaeva, I.P. Iakovleva, K.E. Filippova, Z.I. Gazaryan, V.I. Kuznetsov</i>	
Understanding the Reservoir and Drilling Risk with Multidimensional High Resolution Imaging	982
<i>J.H. Yu</i>	
The Application of Volume-based Seismic Waveform Decomposition for Reservoir Characterization - A Case Study	987
<i>M. Zhang, X.W. Yu</i>	
Quest of Carbonate Stringers in Southwest Kuwait using Post Stack Seismic Inversion Technique	992
<i>M. Rahaman, A. Hafez, Y. Al-Zuabi, G. Al-Sahlan, M. Al-Awadhi</i>	
Seismic and Petrophysical Attribute Maps Correlation for Reservoir Heterogeneity Analysis Using Angular Differences	997
<i>P. Jilinski</i>	

Extended Elastic Impedance Inversion Technology and Its Application of Tight and Thin Reservoir	1002
<i>L. Shi, J. Liu, N. Dong, J. Wang, H. Xia</i>	

ENHANCED HYDROCARBON RECOVERY II

Performance of Near-miscible Simultaneous Water and CO2 Injection for Oil Recovery in Secondary and Tertiary Modes	1007
<i>S.M. Seyyedsar, M.H. Ghazanfari, V. Taghikhani</i>	
Global Optimization of Steamflooding in Complex Heavy Oil Reservoirs	1012
<i>M.S. Azad, A. Awotunde, S.A. Abu-Khamsin</i>	
Aluminium Oxides Nanoparticles as Enhance the Oil Recovery - An Experimental Investigation	1017
<i>L. Hendraningrat, O. Torsater</i>	
Investigation of Enhanced Water Alternating Gas for Dulang Field	1021
<i>M. Sedaralit</i>	
New Approach for Modeling of Polymer Retention Mechanisms - Mechanical Entrapment and Adsorption	1026
<i>B.I. Choi, K.H. Park, J.S. Choi, K.S. Lee</i>	
Investigation of Diffusion and Deposition of TiO2 Nanoparticles in Sandstone Rocks for EOR Application	1031
<i>H. Ehtesabi, M.M. Ahadian, V. Taghikhani</i>	
Simulation of CO2 Injection for EOR and Sequestration, and Investigation of Effective Operational Parameters - Case Study	1036
<i>N. Hasani, B. Sedaeesola, F. Jalali, A. Mirazimi</i>	
Applicability Use of Mulberry Leaf in Chemical EOR Processes - Experimental Approach	1041
<i>S.E. Eshraghi, M. Zamani, S.R. Shadizadeh</i>	

POTENTIAL FIELDS

Automatically Obtaining the Parameters of Potential Field Sources	1046
<i>G.R.J. Cooper</i>	
Improving the Local Wavenumber Method by the DEXP Transformation	1051
<i>M.A. Abbas, M. Fedi, G. Florio</i>	
Noise and Repeatability of Airborne Gravity Gradiometry	1056
<i>A.N. Christensen, M.H. Dransfield</i>	
Best Use of Drillhole Log Data for Geostatistically-Constrained Potential Field Inversions	1061
<i>M. Zengerer</i>	
3-D Radial Gravity Gradient Inversion Applied to the Interpretation of the Vinton Salt Dome, USA	1066
<i>V.C. Oliveira Jr., V.C.F. Barbosa</i>	
New Insights from Interactive Gravity Inversion of Complex Salt Structures - The 3D SEAM Model	1071
<i>M.R. Alvers, B. Lahmeyer, C. Plonka, E. Stangeland Karlsen</i>	
3D Stochastic Inversion of Full-tensor Gravity Gradiometry Data Using Cokriging	1076
<i>M.X. Geng, D.N. Huang, Q.J. Yang</i>	
3D Stochastic Inversion of Potential Field Data Using Structural Geologic Constraints	1081
<i>P.S. Shamsipour, E.S. Schetselaar, G.B. Bellefleur, D.M. Marcotte</i>	

EM MODELLING AND INVERSION

Hybrid Method for Modeling the CSEM Response of a Complex Geoelectrical Subsurface	1086
<i>S. Bakr, T. Mannseth</i>	
Electromagnetic Monitoring of the Propagation of an Injected Polymer for Enhanced Oil Recovery in Northern Germany	1091
<i>K. Tietze, O. Ritter</i>	
Ensemble-based, Bayesian Inversion of CSEM Data Using Structural Prior Information	1096
<i>S. Tveit, S. Bakr, M. Lien, T. Mannseth</i>	
Time-frequency Domain Electromagnetic Sounding to Map Deep Targets in M Depression	1101
<i>G. Yu, Z.X. He, X.D. Suo, W.B. Dong</i>	

NON-CONVENTIONAL GEOPHYSICAL METHODS

An Approximate 3D Computational Method for Real-time	1106
<i>S. Bendsdorp, S.A. Petersen, P.M. van den Berg, J.T. Fokkema</i>	
Seismic While Drilling for the Detection of Near Surface Beds	1111
<i>A. Goyal, A. King</i>	
Microtremor Analysis in Seismic Reflection Data for Identification of Oil and Gas Reservoirs	1116
<i>T.I. Chichinina, E.A. Hogoev, A. Reyes-Pimentel</i>	
3D Microseismic Moment Tensor Focal Mechanism Simulation by Finite Difference Method	1121
<i>H.J. Li, R.Q. Wang, S.Y. Cao, J.Q. Yu</i>	

SEISMIC SIGNAL PROCESSING

The Improvement of Dynamic Matching Pursuit Algorithm and its Application of Gas Reservoir Prediction	1126
<i>H.Q. Liu, F.C. Zhang, M.Q. Zhang, B.C. Shao</i>	
Method Research of Enhancing Resolution Based on S Transform	1131
<i>C. Wenjun, W. Huazhong, W. Deying, L. Zhenchun</i>	
An Improved Method for Multichannel Matching Pursuit Decomposition	1136
<i>C. Ning, Y. Wang</i>	
Comparison of Spectral Enhancement Techniques Applied to Post Stack Data	1141
<i>N. McArdle, G. Paton</i>	
Weak Orthogonal Matching Pursuit with Geophysical Atom Selection	1146
<i>A. Adamo, P. Mazzucchelli, N. Bienati</i>	
Irregular Seismic Data Reconstruction Using a Percentile-half-thresholding Algorithm	1151
<i>Y. Chen, P.D. Shi, Y.Y. Wang, S.X. Wang</i>	
F-x Nonstationary Seismic Data Interpolation Using Complex Nonstationary Autoregression	1156
<i>G. Liu</i>	
Co-core Trace Transform Based Radial Trace Time-frequency Peak Filtering for Seismic Random Noise Attenuation	1161
<i>N. Wu, Y. Li, H.B. Lin, X.C. Xu</i>	

VELOCITY ANALYSIS - THEORY

Seismic Velocity Inversion Based on Multiple Scattering	1166
<i>X.L. Duan, Y.B. Wang, H.Z. Yang</i>	
Signal and Traveltime Parameter Estimation Using Singular Value Decomposition	1171
<i>B. Ursin, M.G. da Silva, M.J. Porsani</i>	
Automatic Anisotropy Inversion with Well Control	1176
<i>C. Zhou, N. Whitmore, Z. Liu, H. Xie</i>	
Wave-equation Based Travel-time Tomography for First Arrival	1181
<i>B. Feng, H.Z. Wang, X. Hu</i>	
Using Asymmetric Chebyshev Method to Obtain Angle Domain Common Imaging Gather	1186
<i>Z.Y. Liu, Y.Q. Chen, J.R. Ning, X.W. Liu</i>	
Common Reflection Point Migration Velocity Analysis with Anisotropic Parsimonious Depth Migration	1191
<i>E.V. Oropeza, G.A. McMechan</i>	
Inversion Velocity Analysis Via Differential Semblance Optimization	1196
<i>Y. Liu, W.W. Symes, Z. Li</i>	
Removing Spurious Oscillations in the Gradient of the Differential Semblance Optimization Functional	1201
<i>H. Chauris, C.A. Lameloise</i>	

SEISMIC NOISE ATTENUATION

Random Noise Attenuation for Seismic Data by Multiscale Time-Frequency Peak Filtering via Nonsampled Pyramid	1206
<i>C. Zhang, Y. Li, H.B. Lin, B.J. Yang, X.Y. Deng</i>	
Eliminating Harmonic Noise in Correlated Vibroseis Data	1211
<i>X.F. Liang, C.H. Wang, Y.S. Lei, H. Zhou, Y.L. Huang, B.M. Li</i>	
Ship Propeller Noise Removal Using a Time-invariant Hyperbolic Radon Transform	1216
<i>Y.Q. Zhang, W.K. Lu, B.R. Zhen</i>	
Seismic Wind Noise Experiments Using a Portable Wind Tunnel	1221
<i>C. Barajas-Olalde, A. Jeffreys</i>	
Cross Interference Noise Attenuation Using Alpha-trimmed Vector Median Filtering	1226
<i>W.C. Wang, H.Q. Li, B. Zhao, G.A. Luo, X.D. Zhang, H.Y. Guo</i>	
Random Noise Attenuation by a Hybrid Approach Using f-x Empirical Mode Decomposition and Multichannel Singular Spectrum	1231
<i>Y. Chen, T. Liu, Y. Zhang</i>	
Curvelet-based Gather Conditioning for Effective Depth Imaging of Legacy Seismic Data -Case Study from Central Poland	1236
<i>M. Cyz, A. Górszczyk, M. Malinowski, P. Krzywiec, M. Mulińska, T. Rosowski</i>	
Deblending Using Normal Moveout and Median Filtering in Common-midpoint Gather	1241
<i>Y. Chen, Y. Sun</i>	

SEISMIC SIGNAL PROCESSING – RESOLVING THE WAVELET

Deghosting of Marine Pressure Recordings Along Curved Streamers	1246
<i>L. Amundsen, A. Reitan</i>	
Simultaneous Denoising and Enhancement of Seismic Signals by a Fractal Conservation Law	1251
<i>F.L. Meng, Y. Li, H.B. Lin, X.Y. Deng</i>	

Application of a Convex Phase Retrieval Method to Blind Seismic Deconvolution	1256
<i>E.E. Esser, F.J.H. Herrmann</i>	
Application of Modified Cauchy-constrained Deconvolution in Carbonate Seismic Data Processing	1261
<i>Y.Y. Ma, G.F. Li, G.X. Peng, H. Zhou, X.M. Zhang, X.B. Liu, X.G. Lin</i>	
Well Controlled Seismic Resolution Enhancement Technique Based on GRNN	1266
<i>J. Wang, Z.C. Li</i>	
Time-varying Wavelet Estimation and Deconvolution Using VSP Data	1271
<i>Y. Zhao, Y. Liu, G.Y. Hu, T.E. Fan</i>	
Seismic Deconvolution via Total Variation Regularization	1276
<i>S.Y. Yuan, J.Z. Liu, R. Zhang, N. Tian, S.X. Wang</i>	
A Novel Method for Enhancing Resolution Using Scale Transforms	1281
<i>S.Q. Chen, X.Y. Li, B.R. Di, J.X. Wei</i>	

AVO-AVA ANALYSIS – NEW FLAVOURS

Joint AVO Inversion of PP and PS Reflections Using the Reflectivity Method	1286
<i>H.X. Liu, J.Y. Li, X.H. Chen, B. Hou, Y. Guo, R.Z. Lin</i>	
PP and PS Waves Joint AVO Inversion of Density and Shear Modulus	1291
<i>Q.Z. Du, G. Chen, B.C. Shao</i>	
PP and PS AVO Joint Inversion for P- and S-wave Moduli	1296
<i>D. J. Hou, Y. Liu</i>	
Influence of Reservoir Size on AVO Characteristics of Reservoirs at Seismic Scale	1301
<i>C. Xu, B.R. Di, J.X. Wei</i>	
Reducing Thin Interbed Tuning Impact on AVO by Sparse Reflectivity Inversion	1306
<i>W. Liu, S.Y. Cao</i>	
A Study on Influence of Frequency-selection to Frequency-dependent AVO Inversion	1311
<i>T. Du, Z.D. Sun, Y.Y. Zhang, H. Yue, C.J. Li, Z.T. Liu</i>	
Estimation of Fluid Mobility from Frequency Dependent Azimuthal AVO - A Synthetic Model Study	1316
<i>Y. Ren, X. Wu, M. Chapman, X.Y. Li</i>	
Probabilistic Simultaneous Inversion of Vp/Vs Ratios Using Solely Zoeppritz Equation for PP-wave	1321
<i>I. Lehocki, P. Avseth, T. Veggeland</i>	

SEISMIC ATTENUATION

Seismic Attenuation from VSP and Well Log Data - NW Shelf Australia Case Study	1326
<i>R. Pevzner, T. Mueller, A. Alasbali, R. Galvin, B. Gurevich</i>	
Stable Methods of Interval Q Factor Inversion Based on Zero-offset VSP Data	1331
<i>G.L. Zhang, X.M. Wang, Z.H. He, F. Li, Y.B. Zhang, J.J. Rong, W. Liu</i>	
A 3D Amplitude-preserved Q Migration on Resolution Enhancement and True-amplitude Recovery for Deep Carbonate Reservoir	1336
<i>H. Yue, S.Z. Sun, J. Han, X. Sun, Y. Liu, Q. Zhang, Y. Wang, W. Yang, T. Peng</i>	

GEOPRESSURE AND PERMEABILITY

Permeability Estimation Using CFD Modeling in Tight Carboniferous Sandstone	1341
<i>P.I. Krakowska, P.J. Madejski, J.A. Jarzyna</i>	
Rock Physical Model of the Pressure Dependence of Elastic Moduli	1346
<i>J. Somogyi Molnar, A. Kiss, M. Dobroka</i>	
Identifying the Presence of Secondary Overpressure Generating Mechanisms in Jurassic Shales, UK-Sector, Central North Sea	1351
<i>A. Edwards, S. O'Connor, N. Heinemann, K. Waters, A. Selnes</i>	
Pressure Information System of the Onshore and Offshore Netherlands	1356
<i>J.M. Verweij, G. Kunakbayeva, A.L. Klomp, L. Ghazaryan, H.H. Koolmees, M.P.D. Pluymaekers, D. Hegen</i>	

MULTI-COMPONENT SEISMIC

Surface-Consistent Amplitude Simultaneous Joint Inversion for PP and PS Data	1361
<i>G. Henin, K. Garceran, D. Le Meur, F. Bertin, A. Rollet</i>	
Multicomponent Processing for 2D Imaging through Shallow Gas and Gas Clouds – Offshore Malaysia	1366
<i>S. Maitra, R. Alai, M.S.B. Sulaiman, A. Wardoyo, L. Zi</i>	
Gaussian Beam Prestack Depth Migration of Converted Wave for TI Media	1371
<i>J.G. Han, Y. Wang, J. Lu, M.G. Zhang</i>	
Rotation Analysis of Shear Wave Polarizations in the Presence of Depth-variant Azimuthal Anisotropy	1376
<i>J. Maleski, R.H. Tatham</i>	

ROCK PHYSICS MODELS

Velocity Estimation Based on Rock-Physics Model in Unconventional Shales	1381
<i>C.C. Li, Z.G. Ma, Q. Zhao</i>	
Estimation of Anisotropy Parameters for a Clay-rich Shale Formation Based on a Rock Physics Model	1386
<i>F. Zhang, X.Y. Wu, X.Y. Li</i>	
Measured Dispersion and Attenuation Effects on the Bulk Modulus of Fully-saturated Sedimentary Rocks	1391
<i>L. Pimienta, J. Fortin, Y. Guéguen</i>	
Numerical Experiment of the Differential Acoustic Resonance Spectroscopy for the Acoustic Measurement	1396
<i>C.H. Dong, G.Y. Tang, J.G. Zhao, S.X. Wang</i>	

DEEP WATER SEDIMENTARY SYSTEMS

Magdalena Fan Case Study, Use of 3D Analogue Modelling to Improve Seismic Interpretation	1401
<i>E.M.S. Johansen, K.A. Leeveer, A. Escalona</i>	
External Geometry of Gravity-flow Deposits in the Mesozoic Songliao Basin, China - External and Local Controlling Factor	1406
<i>S. Pan</i>	
Mass Transport Deposits in Songliao Basin, China - Depositional Characteristics and External Geometry	1411
<i>S. Pan</i>	
Sedimentary Characteristics and Genetic Mechanism of Sublacustrine Fans - Liushagang Fm. West of Fushan Sag, China	1416
<i>Z.L. Lin, H. Wang, Y. Li</i>	

GEOCHEMISTRY AND GEOCHRONOLOGY

Faulting-hydrothermal Circulation Relationships Constrained by Thermogene Travertine Dating, Albegna Valley, Italy	1421
<i>G.B. Berardi, G. Vignaroli, M. Soligo, A. Billi, F. Rossetti</i>	
Constraints on the Magnitude and Rate of CO₂ Dissolution at Bravo Dome Natural Gas Field	1426
<i>K.J. Sathaye, M.A. Hesse</i>	
Modeling Paleoreconstructions Based on Geochemical Data and Complex Research of Clay Minerals	1431
<i>V.V. Pankov</i>	

RESERVOIR CHARACTERIZATION – NEW METHODOLOGIES

Bed Thickness Distributions - The Geology Behind the Geophysics	1434
<i>O.G. Grimston, P.A. Connolly</i>	
Sandstone Pinchout Boundaries Identification using Prestack Analysis - A Case Study in JZ Oilfield, Bohai Bay Basin	1439
<i>D. Zhou</i>	
Applications of Poisson Damping Factor (PDF) in the Detection of Marine Reservoir Fluids	1444
<i>L. Tian</i>	
Stochastic Inversion of Petrophysical Parameters Based on Fractal and Low-frequency Prior Information	1449
<i>R.Y. Sun, X.Y. Yin, X.D. Tan, M.L. Yuan</i>	
Seismic Impedance Inversion Using Approximation Zero-norm Minimization with SQP Method	1454
<i>Q. Zhou, J. Gao, G. Zhang, Z. Gao</i>	
Simultaneous Inversion of Petrophysical Parameters Based on a Geostatistical Prior Information	1459
<i>R.Y. Sun, X.Y. Yin, B.L. Wang, C. Li, M.L. Yuan</i>	
Stochastic Inversion of Elastic Impedance Based on Metropolis Sampling Algorithm	1464
<i>R.Y. Sun, X.Y. Yin, X.D. Tan, C. Li</i>	

SEISMIC MODELLING II AND SEISMIC PHYSICAL MODELLING

A Robust Parallel Iterative Solver for Frequency-domain Elastic Wave Modeling	1469
<i>Y. Li, L. Métivier, R. Brossier, B. Han, J. Virieux</i>	
Reflection and Transmission Responses of a Periodic Layered Medium Constituted by Shales and Patchy Saturated Sands	1474
<i>B. Dupuy, A. Stovas</i>	
3D FDM Modeling of Acoustic Reflection Logging in a Deviated Well	1479
<i>K. Zhang, G. Tao, J.X. Li, H. Wang, H. Liu, Q. Ye</i>	
Fast P-wave Raytracing in 3D Layered Orthorhombic Model	1484
<i>E. Blias</i>	
Large, Complex Structure Seismic Physical Modeling Construction and Experiment Precision Analysis	1489
<i>M.S. Wu, B.R. Di, J.X. Wei, Z.K. Jia, Z.J. Kong, Q. Zhang, Y.N. Zhang</i>	
Seismic Physical Modeling Material Based on Polymer Composite	1494
<i>Y.C. Pei, Q. Zhao, Z.G. Ma, W.H. Liu</i>	

Analysis of Multiple Converted Waves in Seismic Physical Model	1499
<i>W.P. Si, B.R. Di, J.X. Wei</i>	
A Novel Acquisition Approach to Seismic Physical Modelling with Rugged Topography	1504
<i>Y. Liu, X.Y. Li, B.R. Di, J.X. Wei, K.R. Qian</i>	

SOURCE ROCKS AND PETROLEUM SYSTEMS

The Effect of Source Rock Potential Map in 3D Petroleum System Model of the Tampen Spur Area, Northern North Sea	1509
<i>Y. Togi, S.J. Lippard</i>	
An Overview of Basin Modeling in the Netherlands - New Results and Applications	1514
<i>S. Nelskamp, R. Abdul Fattah, J.M. Verweij, N. Witmans</i>	
Seismic Criteria for Predicting Reservoir Quality and Delineating Complex Traps in the West Siberian Petroleum Province	1519
<i>D.V. Kontorovich</i>	
Tectonic Processes Influence on the Formation of Upper-Jurassic and Cretaceous Reservoirs of the Alexandrov Arch	1524
<i>A. Kalinin</i>	
HC Generation and Migration at the Western Flank of South Caspian Basin - Results of Basin Modeling	1529
<i>D.A. Huseynov, S. Huseynova</i>	
Reservoir Rock Properties of the Oligocene-Miocene Sediments in the SCB	1534
<i>G.H. Ismaylova</i>	
Using Gas Chimney Detection to Assess Hydrocarbon Charge and Top Seal Effectiveness - Offshore, Namibia	1539
<i>D. Connolly, J. Kemper, I. Thomas</i>	
Migration Pathway Evaluation through Analysis of Hydrocarbon Seeps in the Pelagian basin, Sahel of Tunisia	1544
<i>A. Belhaj Mohamed, M. Saidi, B. Ibrahim</i>	

STUDENT SESSION - INTEGRATION

Magnetic Modelling of Intrusive Dykes, Koster Fjord, SW Sweden	1549
<i>H.R. Thomsen, J. Vogt, V. Unnithan</i>	
Efficient Production of Methane from Deeper Coal Seam	1552
<i>M.D. Imtiaz, S. Dei, S.K. Singh, S.S. Damke</i>	
Spectral Element Simulation for Random Media	1555
<i>L. Hongjian</i>	

STUDENT SESSION – UNCONVENTIONAL RESOURCES

Parabolic Radon Transform for Acoustic Reflection Wave Separation	1558
<i>Q. Ye, G. Tao, J.X. Li, B. Wang</i>	
Shale Gas in Place Calculation for a Single Well	1561
<i>W. Machowski, G. Zabek</i>	
How Can the South Atlantic Spreading Rate Vary so Quickly?	1564
<i>L. Colli</i>	
Using of the Optical Fiber Technology in Oil and Gas Downholes	1567
<i>A. Aleksandrovskaya</i>	
Hydraulic Fracture Designing For the Development of A Tight Gas Reservoir	1570
<i>M.S. Qamar, M.H. Farooqui, O. Ahsan</i>	

STUDENT SESSION – PETROLEUM SYSTEMS AND GEOCHEMISTRY

Migration and Alteration Processes in Barents Sea Oils and Condensates - A Geochemical Approach	1573
<i>B. Lerch, D.A. Karlsen, D. Duggan</i>	
Statistical Analysis of Microelement Trends in Graptolitic Argillite, Northern Estonia	1576
<i>O.P. Nzekwe, R. Lehné, O. Lenz</i>	
Organic Geochemistry, Burial History and HC Generation Modelling of Upper Cretaceous Sediments in the Chad (Bornu) Basin	1579
<i>A.K. Adegoke, W.H. Abdullah</i>	
Molecular Composition of Abu Gabra Organic-rich Sediments in the Fula Sub-basin, Muglad Basin (Sudan)	1582
<i>Y. M. Makeen, W. Hasiah Abdullah, M. Hail Hakimi</i>	

STUDENT SESSION – GEOLOGY OF CARBONATE AND FRACTURED RESERVOIR

Investigation and Model Correlations of Vp/vs and Porosity of Carbonates	1585
<i>J. Pupos, N. Gegenhuber</i>	

High Resolution Stratigraphy and Reservoir Heterogeneity of Khartam Member of Khuff Formation from Outcrop, Saudi Arabia	1588
<i>M. Osman, O. Abdullatif, M. Al-Farhan, H. Eltom, M. Bashri</i>	
Steady and Unsteady Flow in Permeable-fractured Carbonate Reservoirs	1591
<i>L.C. Vasquez Cardenas, N.S. Golikov</i>	
Geological Modeling of Petroleum Carbonate Reservoirs	1594
<i>B. Musrepova, N. Kuldybayeva</i>	

STUDENT SESSION – EOR AND RESERVOIR SIMULATION AND MANAGEMENT

A Modelling Study Of Broadband Seismic Wave Propagation In A Deep Mine	1597
<i>R. Saleh, B. Milkereit</i>	
Steam Actuated In-Situ Combustion - An Advancement in EOR	1600
<i>G. Singh</i>	
Optimization of Polymer Flooding Design for Maximizing Economic Profit under Bottom-Water Condition	1603
<i>K.H. Park</i>	
Improved Recovery by Optimizing Water Flooding - An Experimental Approach	1606
<i>A. Chaturvedi, G. Singh</i>	
Experimental Investigation of Polymer Solutions Used in Enhanced Oil Recovery - Thermal Properties Improved by Nanoclay	1609
<i>G. Cheraghian, S. Khalili Nezhad, M. Kamari, S. Bazgir</i>	
Potential of Laser to Use in Oil and Gas Well Drilling with Special Attention to Asmary Formation	1612
<i>S. Rahimi, M. Ghanbari, S. Ghadami Jegarluet, A. Khoushkho</i>	
Polymer Adsorption on Reservoir Rocks - The Role of Nanoparticles Clay	1615
<i>G. Cheraghian, S. Khalili Nezhad, M. Kamari</i>	

BEST OF STUDENT POSTERS - GEOLOGY

3D Subsurface Temperature Model of Europe for Geothermal Exploration	1619
<i>J. Limberger, J.D. van Wees</i>	
Synthetic Diagenesis - The Key to Carbonate Systems in Basin Modelling	1622
<i>A. Mangione, H. Lewis, S. Geiger, C. van der Land, R. Wood, G. Couples</i>	
Paleogeographic Reconstruction of Northern Caribbean Region from Late Cretaceous to Recent	1625
<i>S.S. Ahmad, A. Escalona</i>	
Sedimentary Sequence and Evolution of Channel-Lobe in Li Wan Deep-water Areas, Baiyun Sag, Northern South China Sea	1628
<i>H.R.L Liu</i>	
Characterization of Carbonate Cements in Upper Jurassic Sandstones from the Danish Central Graben, North Sea	1631
<i>M. Thorup, R. Weibel, J. Therkelsen, H. Friis, P. Johannessen, K. Dybkjaer</i>	
Kerpini Fault Controlled Sedimentation in Kerpini Fault Block, Greece	1634
<i>R.A. Syahrul, C. Townsend, A. Escalona, A. Dahman</i>	
Inversion Structures in a Foreland Area - Seismic Examples from the Adriatic Sea - Italy	1637
<i>P. Pace, V. Scisciani, D. Margiotta, F. Calamita, D. Rowlands, N. Hodgson, P. Esestime</i>	
The Evolution of Reverse Faults in Forced-fold Analogue Experiments Using Wet Clay	1640
<i>A. Druga, Z. Schleder, C. Krezsek</i>	

BEST OF STUDENT POSTERS - GEOPHYSICS

Seismic Modeling for Investigating the Influence of Pore Geometry to the Seismic Velocity in Carbonate Rock	1643
<i>P. D. Wardaya, R.P. Major, C.W. Sum, S. Ridha</i>	
Moving Audio Magnetotelluric (AMT) Test Measurement	1646
<i>C. Shan, L.B. Pedersen</i>	
Preliminary Paleomagnetic Results from the Calimani Mountains, Romania	1649
<i>D. Bugheanu, D. Dimofte, C.G. Panaiotu</i>	
The Analysis of Seismic Response Characteristics of Tight Thin Inter-layer Reservoirs	1652
<i>W. Hu, L.G. Han, P. Zhang</i>	

BEST OF STUDENT POSTERS - RESERVOIR

Impact of Fracturing and Drainage-Wide Production on Tight Gas Reservoir	1655
<i>M.H. Farooqui, M.S. Qamar, O. Ahsan</i>	
Multi-Data Reservoir History matching of Crosswell Seismic, Electromagnetics and Gravimetry Data	1660
<i>K. Katterbauer</i>	

New Idea in Original Oil Water Contact (OOWC) Reconstruction for Mature Oil Field - Example from Terbang Field	1663
<i>E.H. Sihombing, J. Setyowiyoto</i>	

FIELD STUDIES AND FRACTURED RESERVOIRS

Predicting Multi-scale Deformation and Fluid Flow Patterns in Folds Using 3D Outcrop Models and Mechanical Modelling	1666
<i>K. Bisdom, G. Bertotti, B.D.M. Gauthier</i>	
Natural Fracture Characterization in Aptian Carbonates, Araripe Basin, NE Brazil	1671
<i>T.S. Miranda, J.A. Barbosa, J.F.W. Gale, R. Marrett, I. Gomes, V.H.M.L. Neumann, G.C. Matos, O.J. Correia, M.L. Alencar</i>	
Controls on Failure Mode in Fractured Chalk, and Its Influence on Fracture Geometry	1676
<i>M. Welch, R.K. Davies, R.J. Knipe</i>	
Understanding the Interplay of Fractures, Stresses & Facies in Unconventional Reservoirs - Case Study from Chad Granites	1681
<i>D. Lirong, C. Shrivastava, D. Chuanshu, W. Jingchun, N. Hammond, C. Anoliefo, D. Lei, M. Siddick</i>	

RIFT SYSTEMS – TECTONICS AND SEDIMENTATION

Structural Development of the Dutch Central Graben - New Ideas from Recent 3D Seismic	1686
<i>E.A. Rosendaal, N. Kaymakci, D. Wijker, B.M. Schroot</i>	
Structural Framework Derived from Surface Satellite Data Integrated with Subsurface Gravity-seismic Imagery, SE Kenya	1691
<i>D. Necea, M. Oehlers, N. Johnson</i>	
Geometry and Forming Mechanism of Synsedimentary Structures in Northern Melut Sub-Basin, South Sudan	1696
<i>J. Bai, Z.S. Shi, L.H. Fang, T.Q. Wang, W.W. He, Y.R. Jia, F.L. Ma, J. Li</i>	
Subtle Prospects Identification and Hydrocarbon Accumulation Model in Slope Zone, Rift Basin - A Case in Melut Basin	1701
<i>J. Li, T.Q. Wang, W.W. He, J. Bai</i>	

INNOVATIVE TECHNOLOGIES

Seismic Calibration of Distributed Acoustic Sensors (DAS) in a Joint Borehole-surface Experiment	1706
<i>F. Poletto, A. Clarke, A. Schleifer, D. Finfer, P. Corubolo</i>	
Seismic Data Analysis Using Digital Music Technology - Applications in Hydrocarbon Exploration	1711
<i>P. Dell'Aversana, G. Gabbriellini, A. Amendola</i>	
Benefit of Ultra-long Offset Data for Subsalt Imaging in Deep Water Gulf of Mexico	1716
<i>Q. Wu, Y. Li</i>	

VOLUME 3

Optimal Survey Design for Big Data	1721
<i>D. Coles, M. Prange, H. Djikpesse</i>	
Energy Efficient Technologies of Hydrocarbon Resources Development	1726
<i>M. Kotenev, A. Kotenev</i>	
Logging While Drilling Via Autonomous Sonde	1731
<i>A. Kepic, C.J. Dupuis, G. Stewart, B. Wilkinson, A. Greenwood, A. Podolska</i>	
Comparison of Wellbore Stability of UBD in the Case of Laser Drilling and Conventional Operation	1736
<i>M. Bazargan, A. Nakhaee, A. Koohian, S. Irawan, M. Habibpour, M. Shahvar</i>	
An Innovative Approach to Select Core Point in Challenging Environment Using the GWD&trade - (Gas While Drilling) Methodology	1741
<i>A. Zaidi, C. Carugo, R. Pietrogiovanna, M. Ali</i>	

MULTI-COMPONENT CASE STUDIES

Multi-component 3D Seismic - A Successful Fracture Characterization in Algeria-Processing Challenges in Noisy Environment	1746
<i>V. Belz, M. Donati, J.L. Piazza, S. Baillon, D. Marin, A. Rollet, H. Toubiana, J. Castro, C. Gordillo, A. Bouheouira, T. Belhouchet, A. Belbachir, M. Rahal</i>	
Multi-component 3D Seismic - A Successful Fracture Characterization in Algeria-Interpretation of Faults and Fractures	1751
<i>J.L. Piazza, M. Donati, F.D. Martin, J. Castro, C. Gordillo, A. Bouheouira, T. Belhouchet, A. Müller, E. Ramia, S. Baillon, D. Marin, V. Belz</i>	
3D-PS Converted Waves – Solving 3D-imaging Challenges under Gas Clouds - Offshore Malaysia	1756
<i>M.F. Akalin, A.A. Muhamad, Y.C. Tan, Y.B.M. Yusoff, N.A.M. Radzi, S.F.M. Zohdi, M.H. Hashim, M. Ghazali, S. Maitra, A. Wardoyo, M.L. Ghazali, J.V.S. Murthy, G. Wang, X.G. Miao</i>	

Reconnaissance Processing to Understand Potential Value of Converted Waves - Experiences from Culzean	1761
<i>A.S. Calvert, A. Merry, F.G. Bourgeois, E.S. Sturup-Toft, P. Salek, A. Rollet, S. Perrier</i>	
Converted-wave Processing of an Ocean Bottom Cable Dataset from the Arabian Gulf	1766
<i>M.J. Grimshaw, J.P. Holden, E. Murray, K. Shaikat, B. Beck, F. Al-Enazi</i>	
Shear-wave Splitting and Azimuthal Anisotropy in an Offshore Field in the Arabian Gulf	1771
<i>J.P. Holden, B. Beck, M.J. Grimshaw, C. Giersz, F. Al-Enazi</i>	
Elastic Impedance Minus Shear Impedance - A Powerful Pre-stack Inversion Attribute from OBC Data, Campos Basin, Brazil	1776
<i>L.M.R. Martins, T. Davis</i>	
Dan Field Ocean Bottom Node (OBN) Survey - A Shallow Water Case History	1781
<i>J. Zaske, P. Hickman, H. Roende, S. Mukund, S. Halliday, S. Perrier</i>	

CONVERTED WAVE PROCESSING AND WAVEFIELD DECOMPOSITION

Moveout Approximation for Converted Waves in Layered Orthorhombic Medium	1786
<i>I. Ravve, Z. Koren</i>	
General Definition of Reflection-point Coverage for P- and PS-wave COV Data	1791
<i>J.E. Gaiser</i>	
Model Based Registration of PP and PS Waves in the Depth Domain	1796
<i>H.C. Dai, X.Y. Li, T.J. Xu</i>	
S-ray Approximation Tomography for PP and PS Horizon Co-Depthing	1801
<i>L.A.D. D'Afonseca, M. Dumett, O.J. Birkeland, P. Guillaume, T. Krishnasamy, T.M.G. Santiago, C. Guerra</i>	
PS-wave Processing and Velocity-model Building from a Sparse OBN Array	1806
<i>R.R. Haacke, L. Casasanta, P. Chiarandini, N.V.V. Golla, A. Kalil, S. Drummie, I. Meades, A. Strudley</i>	
Application of Excitation Amplitude Imaging Condition to PS Wave Imaging in Elastic Reverse-time Migration	1811
<i>Q.Z. Du, M.Q. Zhang, X.F. Gong, Y. Liu</i>	
Near-surface Imaging Challenges for Marine PS-wave Data	1816
<i>L. Casasanta, S. Gray</i>	
Wavefield Decomposition of Field Data, Using a Shallow Horizontal Downhole Sensor Array and a Free-surface Constraint	1821
<i>N. Grobbe, J. van der Neut, C. Almagro Vidal, G. Drijkoningen, K. Wapenaar</i>	

DIGITAL ROCKS AND ROCK PHYSICS FOR SUBSURFACE CHARACTERIZATION

Pore-scale Imaging and Ultrasonic Velocity Measurements of Tetrahydrofuran-hydrate Bearing Sediments	1826
<i>M. Schindler, M.L. Batzle</i>	
Pore-scale Analysis of Electrical Properties in Laminated Rock Using Digital Rock Physics	1831
<i>J.P. Zhao, J.M. Sun</i>	
Numerical Estimation of Carbonate Properties Using a Digital Rock Physics Workflow	1836
<i>M. Osorno, D Uribe, E.H. Saenger, C. Madonna, H. Steeb, O. Ruiz</i>	
Quantitative Investigation of Microstructures within Porous Rocks by Using Very High Resolution X-ray Micro-CT Imaging	1841
<i>G. Zacher, M. Halisch, P. Westenberger, F. Sieker</i>	
Uncertainty Quantification in Rock Physics Modelling	1846
<i>D. Grana</i>	
Constraining Petrophysics with Rock Physics	1851
<i>M. Sams</i>	
Combined Modeling of Burial History and Rock Physics Properties - A Barents Sea Demonstration	1856
<i>P. Avseth, I. Lehoccki, T. Veggeland</i>	
Unlocking the Secrets of Seismic Anomalies in the Load Transfer Domain	1861
<i>A.S. Selnes, A.E. Edwards, N.W. Whitfield, K.W. Waters, C.M. Marzocchi</i>	

RESERVOIR CHARACTERIZATION – CASE STUDIES

Temperature Gradient Anomalies in the Buntsandstein Sandstone Reservoir, Upper Rhine Graben, Soutz, France	1866
<i>S. Haffen, Y. Geraud, M. Diraison, C. Dezayes, D. Siffert, M.H. Garcia</i>	
Realistic DFN Modelling Using 3D 3C Seismic Data for the Marcellus Shale with Application to Engineering Studies	1871
<i>S.J. Emsley, S. Chi, J. Hallin, J. Rivas</i>	
Fracture and Carbonate Reservoir Characterization Using Sequential Hybrid Seismic Rock Physics, Statistic and Artificial	1876
<i>D. Hasanusi</i>	
Identification of Facies from Multiple Well Logs Accounting for Spatial Dependencies and Convolution Effects	1881
<i>D.V. Lindberg, E. Rimstad, H. Omre</i>	
An Innovative Approach for Formation Fluid Typing with API and GOR Assessments in Real Time from Mud Gas Data	1886
<i>D. Merino-Garcia, G. Beda, J. Dessay, A. Nouraei, B. Lovatti</i>	

Carbonate Seismic Rock Physics Modeling and Hydrocarbon-detection	1891
<i>Y.J. Zhou, X.H. Zhang, Y. Lei, H.S. Sun, Z.G. He</i>	
Integrated Reservoir Modelling Workflow for Deep Water Turbiditic Reservoirs - An Angola Case Study	1896
<i>G.B. Straathof, C. Rigollet, F. Ferdinandi, G. Sprega</i>	
Reservoir Characterization Using Converted-wave Seismic Data - Case Study from Athabasca Oil Sands	1901
<i>C. Dumitrescu, G. Larson, F. Mayer, D. Talinga</i>	

SEISMIC MULTIPLE ATTENUATION I

A New Solution to Eliminate Free Surface Related Multiples in Multicomponent Streamer Recordings	1906
<i>M. Vasmel, J.O.A. Robertsson, L. Amundsen</i>	
Generalization of the EPSI Primary Estimation Algorithm for Deep-towed and Slanted Cables	1911
<i>D.J. Verschuur</i>	
A Method for Unified Suppression of Surface-related Multiple and Ghosts	1916
<i>W.Q. Sun, H.Z. Wang, J.T. Hu, S.W. Liu</i>	
Multilevel Acceleration Strategy for the Robust Estimation of Primaries by Sparse Inversion	1921
<i>T.T.Y. Lin, F.J. Herrmann</i>	
Multiple Attenuation Using MultiFocusing Technology	1926
<i>M. Rauch-Davies, A. Berkovitch, K. Deev, E. Landa</i>	
Shallow Reverberation Prediction Methodology with SRME	1931
<i>S.R. Barnes, R.F. Hegge, R. van Borselen, J. Owen</i>	
Water-layer Demultiple Using Separated Wavefields From Variable-depth Streamer Data	1936
<i>S. King, G. Poole</i>	
Surface Multiple Attenuation Developments in the Clair Field	1941
<i>A. Dawson, S. Wolfarth, C. Leone, M. Salgadoe, R. Alexandre</i>	

SEISMIC IMAGING – CASE STUDIES I

Using RTM Angle Gathers for Velocity Model Building in a Structurally Complex Area - A Real Case Study	1946
<i>O. Hermant, S. Hassan, J.P. Montel</i>	
Diffraction Imaging for Exploration of Seafloor Massive Sulfide Deposits - Case Study Solwara 1 Site	1951
<i>K. Tertyshnikov, R. Pevzner, A. Bóna, F. Alonaizi, B. Gurevich</i>	
Subsalt Pore Pressure and Imaging Using Rock Physics Guided Velocity Modelling	1956
<i>Y. Liu, D. Bhaskar, N.C. Dutta</i>	
The Seismic Response to Strong Vertical Velocity Change	1961
<i>I.F. Jones</i>	
Compensating Attenuation Due to Gas Cloud Through QPSDM, a Case Study from Offshore Brunei	1966
<i>K.H. Teng, J. Zhou, X. Wu, Y. Zhou, T. Brothers, S. Bergler, C. Gibson</i>	
Pre-salt Imaging Beneath Volcanic Intrusions in Brazils Santos Basin	1971
<i>J. Langlois, Z. Yuan, H. Li, R. Kumar, B. Bai</i>	
High Fidelity Imaging with Least Squares Migration	1976
<i>B. Salomons, M. Kiehn, J. Sheiman, B. Strawn, F. Ten Kroode</i>	
FWI-driven High-fidelity Depth Imaging of a Large 3D Arctic Seismic Survey, West Greenland	1981
<i>B. Du, S. Perrier, H. Roende, J. Andersen</i>	

TIGHT FORMATIONS & UNCONVENTIONAL RESERVOIRS

Rock Mechanics template In a Shale Oil Play, Vaca Muerta Fm, Argentina and Their Impact in the Exploratory Strategy	1986
<i>J. Zunino, J. Soldo</i>	
Improved Prediction of Source Rock Maturity in Liquid-rich Unconventional Plays with 3D Basin Modeling	1991
<i>A. Hartwig, D.J. Jacobi, G.M. Walters, P.J. Perfetta</i>	
Accurate Velocity Estimation Through the Curvelet Domain	1996
<i>R. Alai, G. Nyein, M.N.B.M. Isa, M.S.B. Sulaiman, B. Chowdhury, M. Yusup</i>	
Fluid Flow in Unconventional Reservoirs - Modelling and Implications	2001
<i>V.M. Yarushina, Y.Y. Podladchikov, N.S.C. Simon, D. Bercovici</i>	
Evaluation of Formation Permeability Using Minifrac Pre-closure Data - Case Study	2006
<i>V.Y. Guk, M.N. Bychina, M.A. Tuzovskiy</i>	
Understanding Net Pay in Tight Gas Sands - A Case Study from the Lower Saxony Basin, NW-Germany	2011
<i>B. Koehrer, K. Wimmers, J. Strobel</i>	
The Role of Geoscience and Engineering in Securing Social License to Operate in Europe	2016
<i>S.W. Garrett</i>	

DECON, DEGHOST AND MUCH MORE

Results of Deconvolution with Sparseness Constraints	2021
<i>A. Guitton, J. Claerbout</i>	

Seismic Reflectivity Inversion by Curvelet Deconvolution – A Comparative Study and Further Improvements	2026
<i>R. Wang, Y. Wang</i>	
Surface-consistent Residual Phase Corrections	2031
<i>K. Garceran</i>	
Robust Surface-consistent Phase Estimation	2036
<i>P.W. Cary, N. Nagarajappa</i>	
Comparison of Two Semi-automatic Techniques for Seismic-to-well Tying	2041
<i>R.H. Herrera, M. van der Baan, S. Fomel</i>	
Improved Plane Wave Destruction for Iterative Local Slope Estimation	2046
<i>K.J. Hellman</i>	
Further Application of Frequency-diverse Filtering - A New 3D Deghosting Algorithm for Streamers	2051
<i>Y.J. Ji</i>	
Premigration Ghost Wavefield Elimination on Different Cable Configurations - A Case Study in the Gulf of Mexico	2056
<i>B. Hu, H. Shen, P. Wang, V. Tyagi</i>	

FWI – THEORETICAL DEVELOPMENTS I

Full Waveform Inversion for Kinematic Equivalence	2061
<i>J.K. Washbourne, K.P. Bube, K.T. Nihei, S.T. Kaplan, J.P. Stefani, N.K. Shah, G. Hampson, C. Manuel, D. Bevc</i>	
Full Waveform Inversion Using the Energy Objective Function	2066
<i>S. Jeon, W. Ha, J. Kwon, C. Shin</i>	
Two-dimensional Unwrapped Phase Inversion with Damping and a Gaussian Filter	2071
<i>Y. Choi, T. Alkhalifah</i>	
A New Take on FWI - Wavefield Reconstruction Inversion	2076
<i>T. van Leeuwen, F.J. Herrmann, B. Peters</i>	
Wave-equation Based Inversion with the Penalty Method - Adjoint-state Versus Wavefield-reconstruction Inversion	2081
<i>B. Peters, F.J. Herrmann, T. van Leeuwen</i>	
Explicit High-contrast Surface Refinement Using Full Waveform Inversion	2086
<i>J.W.D. Hobro, J.E. Rickett</i>	
Full Waveform Inversion Based on the Optimized Gradient and Its Spectral Implementation	2091
<i>Z. Wu, T. Alkhalifah</i>	
Full Wave Inversion Using a Spectral-Element Discontinuous Galerkin Method	2096
<i>J.R. Krebs, S.S. Collis, N.J. Downey, C.C. Ober, J.R. Overfelt, T.M. Smith, B.G. van Bloemen-Waanders, J.G. Young</i>	

FWI – THEORETICAL DEVELOPMENTS II

Source Wavelet Estimation in Full Waveform Inversion	2101
<i>D. Sun, K. Jiao, D. Vigh, R. Coates</i>	
Scattering Angle Base Filtering of the Inversion Gradients	2106
<i>T. Alkhalifah</i>	
Low Frequency De-Noising and De-Ghosting Marine Full Waveform Inversion	2111
<i>P.P. Milcik, R.E. Plessix, K.H. Matson, V.L. Goh</i>	
Full-waveform Inversion of Conventional Vibroseis Data Using Preconditioning Focused on Low Frequency Enhancement	2116
<i>A. Adameczyk, M. Malinowski, A. Górszczyk</i>	
Effective Cycle Skipping Reduction through Adaptive Data Selection for Full Waveform Inversion	2121
<i>H. Bi, T. Lin</i>	
A Probabilistic QC for Cycle-skipping in Full Waveform Inversion	2126
<i>A.M.S. Martinez-Sansigre, A.R. Ratcliffe</i>	
Statistical Sampling Enabled Full Waveform Inversion	2131
<i>K. Jiao, A. Schiemenz, R. Coates</i>	
Fast Uncertainty Quantification for 2D Full-waveform Inversion with Randomized Source Subsampling	2136
<i>Z. Fang, F.J. Herrmann, C.D. Silva</i>	

MICROSEISMIC – CASE STUDIES

Temporal Variation in Subsurface Stress Estimated from Seismic Scattering	2141
<i>K. Okamoto, H. Mikada, T. Goto, J. Takekawa</i>	
Passive Seismic Monitoring at the Ketzin CCS Site - Magnitude Estimation	2146
<i>B.F. Paap, T.P.H. Steeghs</i>	
Observation and Signatures of Injection-induced Repeating Earthquake Sequences	2151
<i>J. Kummerow, C. Dinske, H. Asanuma, M. Häring</i>	
Rupture Propagation Imaging at Microseismic Scale at the Basel EGS Project	2156
<i>J. Folesky, J. Kummerow, S.A. Shapiro, M. Häring, H. Asanuma</i>	
Seismic Efficiency and Overshoot of Fractures Associated with Stimulation in Heavy Oil Reservoirs	2161
<i>L.N. Meighan, T.I. Urbancic, A.M. Baig</i>	

Microseismic Monitoring - Source Characterization and Physical Modeling	2166
<i>O. Akbas, R. Stewart, N. Dyaour</i>	
Quantifying Reservoir Stimulation Using Passive Traveltime Tomography	2171
<i>J.W. Huang, J.M. Reyes-Montes, X.P. Zhao, F.D. Chu, R.P. Young</i>	
Where is the Proppant? DFN Modeling, Proppant Placement, and Drainage Estimation from Microseismic Data	2176
<i>C.W. Neuhaus, M. Ellison, C. Telker, K. Blair</i>	

EM INVERSION

Determining Resistivity from Towed Streamer EM Data Using Unconstrained Inversion - Tie to Well and Discovery Examples	2181
<i>A.J. McKay, K. Flisnes Bergh, A.H. Bhuiyan</i>	
Characterization of Sao Francisco Basin, Brazil - Joint Inversion of MT, Gravity and Magnetic Data	2186
<i>F.F. Solon, L.A. Gallardo, S.L. Fontes</i>	
Time Domain EM Soundings for the Delineation of the Fresh Water - Salt Water Interface in Eastern Canada Islands	2191
<i>J. Giraud, M. Chouteau, A. Bouchedda</i>	
First Results from an Electromagnetic Survey of a Gas Hydrate Vent Offshore Mid-Norway	2196
<i>A. Swidinsky, S. Hölz, M. Sommer, M. Jegen, K. Weitemeyer, C. Berndt</i>	
3D Inversion of Vertical Dipole - Time Domain CSEM data	2201
<i>T. Holten, M. Commer, G. Newman, S.L. Helwig</i>	
Integral Equation Method for Anisotropic Inversion of Towed Streamer EM Data - Theory and Application for the TWOP Survey	2206
<i>M. Zhdanov, M. Endo, D. Yoon, M. Cuma, J. Mattsson, J. Midgley</i>	
Anisotropic 2.5D Inversion of Towed Streamer EM Data from Three North Sea Fields Using Parallel Adaptive Finite Elements	2211
<i>K. Key, Z. Du, J. Mattsson, A. McKay, J. Midgley</i>	
3D Anisotropic Inversion of Towed Streamer EM Data over the Mariner Field in the North Sea	2216
<i>J. Mattsson, M.S. Zhdanov, M. Endo</i>	

SEISMIC ACQUISITION I

Cableless Seismic Acquisition Technology Evaluation and First Full Field Implementation in France and Uganda	2221
<i>J.M. Mougenot, C. Cardama, P. Faure, R. Sanchez</i>	
Cableless Seismic Acquisition to Reduce Environmental Footprint in Murchison Falls National Park Uganda	2226
<i>C. Cardama, R. Sanchez, J.M. Mougenot</i>	
Allowing Seismic Surveys to Boldly Go Where No Surveys Have Gone Before	2231
<i>S. Baris, N. Badel, H. Ribeiro, F. Layan, P. Herrmann, O. Lamerain, A. Jacques, P. Faure</i>	
Quantifying Noise in a Land Seismic Image - Stealth Acquisition Experiment	2236
<i>E. Kragh, M. Daly, J. Quigley</i>	
Field Measurements of the Distortion Resulting from the Use of Tilted Geophones	2241
<i>T. Dean, P. Claasen, B. McCarthy</i>	
Field Measurements of Land Seismic Ambient Noise and Their Implications for the Effectiveness of Geophone Arrays	2246
<i>T. Dean, J.C. Dupuis, R. Hassan</i>	
Simultaneous Mini Sources for Simultaneous Infill and Land Acquisition	2251
<i>C. Berron, E. Forgues, J.B. Laffitte, M. Leclercq</i>	
Exploring the Extent to which Streamer Separation Can Be Relaxed when Using a Multimeasurement Streamer	2256
<i>S. Mahat, D. Saputra, J.R. Crompton, M. Vassallo, P.A. Watterson</i>	

EXPLORATION PLAY AND PROSPECT EVALUATION

Assessment Performance Tracking of Multiple Target Prospects - A Statistical Approach	2261
<i>G. Martinelli, C.B. Stabell</i>	
Enhanced Seismic Imaging of Permian and Intra-Carboniferous Sections to Define the Dinantian Play Fairway - UK North Sea	2267
<i>K. Rodriguez, N. Hodgson, R. Wrigley, H. Nicholls</i>	
Old play, New Prospectivity - the Revival of the Basal Rotliegend Play, Offshore Netherlands and Germany	2272
<i>J. Corcoran, S.F. Lunn</i>	
A New Chance for the Zechstein-2 Carbonate Play in the Mid North Sea High Area?	2277
<i>B. Jaarsma, J. Schneider, S.P. Tolsma, J.E. Lutgert</i>	
Revisiting a Mature Exploration Area - Insights from the Integration of Quantitative Seismic Analysis and Basin Modelling	2282
<i>A.W. Kayatmo</i>	
Exploration Potential Karpinsky Ridge Rostov Dist, Russia	2287
<i>J.E. Battie, E. Lorange, T. Haugen</i>	
Regional Prospectivity of Offshore Namibia and the Angolan Namibe Basin	2292
<i>C. Koch, P. Coole</i>	

Plays, Prospectivity and Analogues, NE Greenland	2297
<i>P.W. Bradbury, A. Checconi, R. Masotti, K. Hernon, R. Dirks, F. Winter</i>	

BROADBAND ACQUISITION AND PROCESSING I

Maximizing the Ultra-low Frequency Output from Air Guns	2302
<i>M. Landro, L. Amundsen</i>	
Broad-band Well Tie	2307
<i>R.E. White, E. Zabihi Naeini</i>	
Improved Interpretability via Dual-sensor Towed Streamer 3D Seismic - A Case Study from East China Sea	2312
<i>S. Rongfu, C. Hua, W. Yun, Z. Yabin, M.T. Farouki, D. Benfield, H. LeGluet, P. Lee</i>	
Broadband Uplift on Seismic Impedance Inversion - With Examples from Offshore Angola	2317
<i>E. Sadeghi, C. Deplante, P. Dos-Reis</i>	
Broadband for Everyone - Increasing Notch Diversity Using Variable Streamer Profiles	2322
<i>P.E. Dhelie, J.E. Lie, V. Danielsen, A. Myklebostad</i>	
Increased Streamer Depth for Dual-sensor Acquisition - Challenges and Solutions	2327
<i>M. Lesnes, A. Day, M. Widmaier</i>	
Acquisition Considerations for Broadband from Fixed Depth Hydrophone Streamers	2332
<i>P.M. Fontana</i>	
Optimizing the Generation and QC of Low-Dwell Sweeps	2337
<i>N. Tellier, G. Ollivrin, D. Boucard</i>	

TIME-LAPSE RESERVOIR MONITORING

Integrated 4D Inversion Approach in Danish Chalk Fields	2342
<i>U. Micksch, I.H. Herbert, A.J. Cherrett, H. Roende, M.A. Calvert, J. Zaske</i>	
Calibration of a Weak 4D Seismic Signal for Fluid Pressure Assessment	2347
<i>D. Rappin, P. Dos-Reis, P. Thore, C. Hubans</i>	
Analysis of Shallow Gas in the Ekofisk Area	2352
<i>K. Haavik, K. Eidissen, M. Landro</i>	
Repeated Time-lapse Seismic Data Quantify Amplitude Tuning at the Sleipner CO2 Injection Site	2357
<i>A.K. Furre, O. Eiken</i>	
Estimation of Critical and Maximum Gas Saturation Using Multiple 4D Seismic Surveys	2362
<i>D. Obidegwu, C. MacBeth</i>	
Initial Results of a Pilot 4D Seismic Monitor in a Difficult Shallow Offshore Carbonate Context - Dynamic Connectivity and Implications for Development	2367
<i>A.A. Adeyemi, E. Brechet, C. Hubans, C. Euriat, J.F. Le Roch, T. Pigeaud, M. Emang</i>	
4D Seismic for Carbonate Reservoir Management and Monitoring - Proof of Concept from the Giant Al Shaheen Field, Offshore	2372
<i>O. Jorgensen, A. Cherrett, A. Uldall, J.R. Henderson, H. Roende, V. Zampetti, M. Emang</i>	
4D Seismic Warping in Two Steps for Overburden and Reservoir - Example of a Compacting Carbonate Field	2377
<i>J. Fiore, C. Hubans, E. Brechet</i>	

VSP PROCESSING AND IMAGING

Traveltime Sensitivity Analysis for Walkaway VSP Anisotropy Survey Design	2382
<i>R. Zhou, B.E. Cornish, D. Quinn</i>	
A Methodology to Estimate Residual Source Statics from 2D/3D VSP Data	2387
<i>M. Lou, F. Doherty</i>	
Demonstrating Seismic While Drilling As a Powerful Tool to Reduce Depth Uncertainty During Drilling	2392
<i>R.S.H. Pettersen, J. Bailey, D. Moody, S. Soulas</i>	
Reflection Salt Proximity	2397
<i>Y. Li, B. Hewett</i>	
Vertical Seismic Profile S-S Imaging with Vertical Vibrators	2402
<i>B.E. Cornish, B.A. Hardage, W. Palacios, L.N. Torres, R. Zhou, D. Quinn</i>	
Two-dimensional VSP Elastic Reverse-time Migration with Attenuation of the Ambiguity Artifacts	2407
<i>V.G. Baydin, L.E. Dovgilevich, I.L. Sofronov</i>	
Imaging of Blended VSP Data Using Full Wavefield Migration in the Common-receiver Domain	2412
<i>A.K. Soni, D.J. Verschuur, A.J. Berkhout</i>	
Reservoir Characterization by Crosswell Seismic in Dom João Field, Brazil	2417
<i>M.C. Schinelli, A. Bassrei, B. Bryans, S. Sharifian Schill, C. Kolb, H. Denaclara</i>	

MIGRATION - THEORY

Prestack Exploding Reflector Modeling and Migration in TI Media	2422
<i>H. Wang, T. Alkhatifah</i>	

Fresnel Beam Migration in Anisotropic Media	2427
<i>S.Y. Liu, T.C. Liu, H.Z. Wang</i>	
Amplitude-friendly Angle Migration with Stabilized Q	2432
<i>S.-K. Foss, D. Merten, N. Eittrich, E.S. Karlsen, J. Mispel</i>	
Fast and Accurate Solutions of the Eikonal and Transport Equations	2437
<i>M. Noack, S.R. Clark</i>	
Multiple Imaging Based on Stereographic Imaging Condition	2442
<i>Z.N. Li, Z.C. Li, P. Wang, Z.B. Guo</i>	
Omnidirectional Extension of Full Wavefield Migration	2447
<i>M. Davydenko, D.J. Verschuur, A.J. Berkhout</i>	
Nonlinear Sensitivity Operator and Its De Wolf Approximation in T-matrix Formalism	2452
<i>R.S. Wu, C. Hu, M. Jakobsen</i>	
Deabsorption PSTM Method and Application in Daqing Oilfield	2457
<i>W.C. Wang</i>	

ANISOTROPIC PARAMETER ESTIMATION - THEORY

Rotation Parameters for Model Building and Stable Parameter Inversion in Orthorhombic Media	2464
<i>C.M. Lapilli, P.J. Fowler</i>	
Orthorhombic Extension to HTI Velocity Analysis - Theory and Application to a High Density Acquisition	2469
<i>C.M. Davison, M.J. Grimshaw, E.M. Murray, M. Kowalczyk-Kedzierska, S. Angio, A. Ourabah</i>	
Anisotropy Estimation and Image Remapping Using Model Based Moveout	2474
<i>Z. Liu, N.D. Whitmore, C. Zhou</i>	
A Quartic Traveltime Inversion Method for TTI Media and Applications on Anisotropic Migration and Fracture Prediction	2479
<i>X. Sun, S.Z. Sun</i>	
Detecting and Estimating Anisotropy Errors Using Full Waveform Inversion and Ray-based Tomography	2484
<i>S. Mothi, H. Bi</i>	
The Characteristic Wave Decomposition and Imaging in VTI Media	2489
<i>S.Y. Liu, H.Z. Wang, B. Feng</i>	
3-D Waveform Tomography Sensitivity Kernels for Anisotropic Media	2494
<i>R. Djebbi, T. Alkhalifah</i>	
Automated Travel Time Tomography Using Early-arrival Gaussian Packets	2499
<i>J. Tang, A. Lau, M. Woodward, C. Peng, A. Gonzalez</i>	

BASIN ANALYSIS

Mapping Basement and Moho along Brazil's Equatorial Margin Using Potential Field Data to Assist Petroleum Exploration	2504
<i>S.L. Markham, I. Kiviior, P. de Lugao, J. Button, S. Beavers, T. Wise, S. Senderowitz</i>	
3D Regional Velocity Modeling	2509
<i>C. Magneron</i>	
The Taymyr Fold Belt - An Emergent Frontier of Petroleum Exploration?	2514
<i>K. Sobornov, A. Afanasenkov, D. Yakovlev</i>	
Complexity of Sandstone Bodies in the Northern North Sea and Their Implications on Hydrocarbon Prospectivity	2519
<i>O. Olobayo, M. Huuse, C.A.L. Jackson</i>	
Late Jurassic Rifting in the Southern Central Graben - A Complex Story Simplified	2524
<i>R.M.C.H. Verreussel, D.K. Munsterman, J.H. Ten Veen, A. Van de Weerd, K. Dybkjaer, P.N. Johannessen</i>	
Structural Evolution and Its Implication to Heavy Oil Potential in Iliran High, South Sumatera Basin, Western Indonesia	2529
<i>Z. Holis, D.A. Firmansyah, W. Romodhon, M.K. Kamaludin, S. Damayanti</i>	
The Geological Structure of the Netherlands Continental Shelf - Results of a Detailed Mapping Project	2534
<i>J.H. ten Veen, J.C. Doornenbal, M. den Bulk, S.F. van Gessel, N. Witmans</i>	

CARBONATE RESERVOIRS CHARACTERIZATION

Multi-scale Modelling Stomatolite Deposits with a Kernel Learning Approach	2539
<i>V. Demyanov, P.W.M. Corbett, M. Saad</i>	
3D Micro- & Macro- Characterization Workflow for Carbonate Reservoirs	2544
<i>M.F. Leon Carrera, N. Rodriguez Morillas, L. Fontanelli</i>	
Simulation of Carbonate Dissolution at the Pore-scale Using a Streamline Method	2549
<i>J.P. Pereira Nunes, A.Q. Raeini, B. Bijeljic, M.J. Blunt</i>	
Dynamic Pore-scale Imaging of Reactive Transport in Heterogeneous Carbonates at Reservoir Conditions	2554
<i>H.P. Menke, B. Bijeljic, M.G. Andrew, M. Blunt</i>	
Carbonate Coquina Reservoirs - New Insights for Petrophysical Reservoir Characterisation	2559
<i>R. Camara, P. Corbett, C. Tavares, A. Machado, E. Jesus, L. Borghi</i>	

The Evolution of the Kharyaga Carbonate Platform During the Devonian - Carbonate Response to the Structural Heritage	2564
<i>V. Spina, J. Borgomano, G. Nely, N. Shchukina, A. Irving, C. Neumann, V. Neillo</i>	
A New Algorithm of Modified Fuzzy C Means Clustering (FCM) and the Prediction of Carbonate Fluid	2569
<i>L.F. Liu, Z.D. Sun, X.Y. Zhou, J.F. Han, B. Jing, Y.Y. Pan, H.T. Zhao, Y. Neng</i>	
An Improved Porosity Inversion Method Based on Gassmann Equation and Cross Examination on Results of Fluid Prediction	2574
<i>C. Meng, S.Z. Sun, L.F. Liu, Y.Y. Zhang, Z.S. Liu, Y.Y. Pan, R. Rong, W.K. Yang, T. Du</i>	

TRACKING UNCERTAINTY AND RISK THROUGH THE INTEGRATED WORKFLOW

Consistent Uncertainty Quantification on Seismic Amplitudes	2579
<i>L.D. Sandjivy, A. Shtuka, J.L. Mari, B. Yven</i>	

VOLUME 4

Plea for Consistent Uncertainty Management in Geophysical Workflows to Better Support E&P Decision-making	2584
<i>L.D. Sandjivy, A. Shtuka, F.A. Merer</i>	
Stochastic Time-lapse Inversion of a CO2 Sequestration Synthetic Seismic Data	2589
<i>M. Meira, R. Pevzner, E. Caspari, B. Gurevich</i>	
Risk Analysis Using Bootstrap in Combination with Inversion	2594
<i>J.H. Yu, M. Smith, W. Yang, N. Shah</i>	
Geological and Drilling Risk Management for Geothermal Prospects	2599
<i>R.H.B. Rijkers, N. Heijnen, R. te Gussinklo Ohmann</i>	
A Texture Synthesis Based Algorithm for Simulating Reservoir Models	2604
<i>C. Gardet, M. Le Ravalec, E. Gloaguen</i>	
New Approach for the Generation of the Geological Conceptual Model with Limited Information, Understanding Green Fields	2609
<i>R. Rodriguez Torrado, G. De Paola, S. Embid</i>	
Cross-Verification of Adjoint and MCMC Workflows for Estimation of Prediction Uncertainties Including Historical Data	2614
<i>R. Schulze-Riegert, I. Ajala, D. Awofodu, H. Almuallim, J. Baffoe, F. Chataigner, N. Kueck, O. Pajonk, A. Shiromizu</i>	

SEISMIC MODELLING I

Frequency-domain Iterative Solver for 3D Acoustic Wave Equation with Two-stage Semi-analytical Preconditioner	2619
<i>D. Neklyudov, M. Dmitriev, M. Belonosov, V. Tcheverda</i>	
Fast Solution of Time-Harmonic Wave Equation for Full-Waveform Inversion	2624
<i>R.L. Lago, A.P. Petrenko, Z.F. Fang, F.H. Herrmann</i>	
Effective Elliptic Models for Efficient Wavefield Extrapolation in Anisotropic Media	2629
<i>U. Waheed, T. Alkhalifah</i>	
Efficient and Accurate Numerical Wave Propagation	2634
<i>B. Qin</i>	
3D Acoustic Wave Modelling with a Globally Optimal Finite-difference Scheme Based on Least Squares	2639
<i>X.H. Cai, Y. Liu, J.M. Wang, W.H. Wang</i>	
One-step Lowrank Wave Extrapolation	2644
<i>G. Sindi, T. Alkhalifah</i>	
Geophysical Simulation with High-accuracy FDM Multiblock and Hybrid Techniques	2649
<i>I.L. Sofronov</i>	
A Robust Absorbing Layer Method for Seismic Wave Simulation in Anisotropic Media	2654
<i>L. Metivier, R. Brossier, S. Operto, J. Virieux</i>	

DEDICATED – LOW-ENTHALPY ENERGY IN NORTH WEST EUROPE I

Geothermal and Hydrocarbon Exploration - The Double Play Synergy	2659
<i>J.D. van Wees, L. Kramers, H. Mijnlief, S. De Jong, B. Scheffers</i>	
Reservoir Modelling of Lower Cretaceous West Netherlands Basin Aquifers for Geothermal Energy Production	2664
<i>C.J.L. Willems, G.J. Welte, M.E. Donselaar, D.F. Bruhn</i>	
Extended Geothermal Potential of Clastic Aquifers by Hydraulic Stimulation	2669
<i>J.G. Veldkamp, M.P.D. Phymaekers, J.D.A.M. van Wees</i>	
An Example of Synergy between Hydrocarbon and Geothermal Energy Production in the Netherlands	2674
<i>E. Peters, S.F. van Gessel, F. Jedari Eyvazi</i>	
Recognizing Geothermal Resources as Unconventionals by the New Geothermal Play Type Catalog	2679
<i>I. Moeck</i>	
Some Geological and Geophysical Aspects of Geothermal Exploration in the Netherlands	2684
<i>A.A. Van De Weerd, L. Van Leeuwen, A.G. Vondrak</i>	

Geological History of the Southern Margin of the West Netherlands Basin - The Geothermal Energy Perspective	2689
<i>Y.W.L. A'Campo, J.H.P. De Bresser, A.A. Van De Weerd</i>	
The Permian Rotliegend Reservoir Architecture of the Dutch Koekoekspolder Geothermal Doublet	2694
<i>H.F. Mijntjef, M.R. Bloemsa, M.E. Donselaar, S. Henares, A.E. Redjosentono, J.G. Veldkamp, G.J. Weltje</i>	

DEDICATED – LOW-ENTHALPY ENERGY IN NORTH WEST EUROPE II

Summary of the EU Project GEISER on Induced Seismicity in Geothermal Engineering	2699
<i>D.F. Bruhn, K. Agustsson, A. Zang, X. Rachez, S. Wiemer, J.D. van Wees, P. Calcagno, E. Huenges</i>	
Minimizing Induced Seismicity in Synthetic Geothermal Reservoirs by Fracture Control in Hydraulic Stimulation	2704
<i>A. Zang, J.S. Yoon, O. Stephansson, O. Heidbach, G. Zimmermann</i>	
ThermoGIS - Unlocking the Geothermal Potential of The Netherlands	2709
<i>M. Phuymaekers, J.D. van Wees, H. Veldkamp</i>	
Optimization of Geothermal-Well-Doublet Placement	2714
<i>R.C.A. Smit, H. Salimi, K.H.A.A. Wolf</i>	

GEOPRESSURE AND PERMEABILITY ESTIMATION

Overpressure Prediction in Shales	2719
<i>T. Han, M. Pervukhina, M.B. Clennell</i>	
Cretaceous Mudrock Compaction Trends Across Haltenbanken, Offshore mid-Norway	2724
<i>A.M.P. Cicchino, C. Sargent, N.R. Gouly, A.M. Ramdhan</i>	
A Comparison of Seismicity-Based Permeability Characterization Methods	2729
<i>M. Hosseini, C.W. Neuhaus, A. Rahimi Zeynal, M. Mueller, M.P. Thornton</i>	
Efficient Prediction of Permeability Based on 3d Images of Core-samples	2734
<i>S. Linden, H. Hagen, A. Wiegmann</i>	

SEISMIC ATTRIBUTES – FROM THEORY TO APPLICATIONS

A New Fault-Enhancement Attribute Based on First Order Directional Derivatives of Complex Trace	2739
<i>P.C.P. Pampanelli, G.M. Faustino, P.M.C. Silva, A. Kolisnyk, M. Gattass</i>	
Structural Oriented Signal Decomposition Using Adaptive Frequency Distributions	2744
<i>A.A. Agrawi</i>	
Application of GLCM-based Seismic Attributes for Anisotropy Detection	2749
<i>C. Eichkitz, J. Amtmann, M.G. Schreilechner</i>	
Seismic Facies Classification Using Visualization-induced Self-organizing Mapping	2754
<i>C. Hu, W. Lu, Y. Zhang</i>	
Automatic Geobody Detection Using Multi-class Sparse Representation	2759
<i>G. Larrazabal, C. Ramirez, G. Gonzalez</i>	
Detailed Geological Site Characterisation of Jemgum Salt Cavern Gas Storage Facility (Lower Saxony Basin, Germany)	2764
<i>B. Otto, C. Hanitzsch</i>	
Geologically Validated Stratigraphic Earth Models from Seismic Data	2769
<i>A. Laake, H. Olsen, B. Frizzell, I. Schmidt</i>	
Mapping of Sand Injectites from Colour-processed Multimeasurement Seismic Data	2774
<i>A. Laake</i>	

CO2 ROCK PHYSICS AND CHEMISTRY

Velocity Estimates of Injected Carbon Dioxide in 4D Seismic Monitoring by Non-linear Elastic Wavefield Inversion	2779
<i>A. Sakai</i>	
Preparatory Work for the Seismic Monitoring of CO2 Storage at a Prospective Site in the St. Lawrence Lowlands, Canada	2784
<i>L. Perozzi, B. Giroux, R. Kofman, D. Schmitt</i>	
Experimental Evidence of Calcite Dissolution and Induced Precipitation during supercritical CO2 Residence	2789
<i>L. Pimienta, L. Esteban, J. Sarout, K. Liu, C. Delle Piane, B. Clennell</i>	
Hydraulic Forces in Geological Storage of CO2	2794
<i>K.U. Weyer</i>	
Interfacial Interactions of CO2-Water-Bentheimer Sandstone System - Dissolution and Contact Angle	2799
<i>N. Shojai Kaveh, E.S.J. Rudolph, W.R. Rossen, K.H.A.A. Wolf</i>	
Reservoir-condition Pore-scale Imaging - Contact Angle, Wettability, Dynamics and Trapping	2804
<i>M.G. Andrew, B. Bijeljic, M.J. Blunt</i>	
Seismic Response of CO2 Saturated Red Wildmoor Sandstone under Varying Temperatures and Pressures	2809
<i>J. Naseryan Moghadam, N. Haque Mondol, H. Hellevang, Ø. Johnsen, P. Aagaard</i>	

Numerical Simulation of Convective Mixing During Carbon Dioxide Sequestration in Saline Aquifers	2814
<i>M. Pashar, B. Rostami, S.M. Seyyedi Nasooh Abad</i>	

FWI – THEORETICAL AND NUMERICAL ADVANCEMENTS

Comparison of Objective Functionals in Seismic Full Waveform Inversion	2819
<i>C.E. Jimenez Tejero, D. Dagnino, V. Sallares, C. Ranero</i>	
Robust Full Waveform Inversion with Normalized Plane-wave Data	2824
<i>T. Kwon, S.J. Seol, J. Byun</i>	
Spectral Implementation of Full Waveform Inversion Based on Reflections	2829
<i>Z. Wu, T. Alkhalifah</i>	
Hybrid Ray-born and Finite-difference Full Waveform Inversion	2834
<i>H.C. Tengesdal, A.N. Minakov, H. Keers</i>	
Influence of Inaccurate Wavelet Amplitude on Frequency-domain Full Waveform Inversion	2839
<i>F.F. Yuan, S.X. Wang, S.Y. Yuan, J.B. Wang, J.N. Li, P.D. Shi, Y. Liu</i>	
Efficient Regularization Technique for Full Waveform Inversion Using Selective Smoothing Coefficients	2844
<i>Y. Park, S. Pyun</i>	
Comparison of Stochastic Optimization Methods on Two Analytic Objective Functions and on a 1D Elastic FWI	2849
<i>A. Sajeva, M. Aleardi, A. Mazzotti, E. Stucchi, B. Galuzzi</i>	
1D Elastic FWI and Uncertainty Estimation by Means of a Hybrid Genetic Algorithm-Gibbs Sampler Approach	2854
<i>M. Aleardi, A. Mazzotti</i>	

PRACTICAL VELOCITY ESTIMATION IN COMPLEX ENVIRONMENTS

Velocity Model Building Based on the Buried Hill Surface and Its Application for the Carbonate Reservoir in Tarim	2859
<i>F. Li, W.S. Duan, H.J. Sun, M. Chen, Z.W. Liu, L.L. Luo</i>	
GPU Accelerated Anisotropic PSTM Imaging Success in a Fold and Thrust Belt, Onshore Trinidad	2864
<i>T. Dhanpaul, S. Ragbir, M.Q. Guo, Y.M. He, Y. Tian</i>	
Non-tomographic Resolution of Small-scale Velocity Anomalies Offshore Netherlands	2869
<i>S. Greenwood, J.K. Fruehn, J.K. Fruehn, R. Lengkeek, R. Gras, E. Verkuil, D. Sekulic</i>	
Reducing Depth Misties by Making Anisotropy Conformal with Velocity and Geology - Example from the NW Australian Shelf	2874
<i>S. Birdus, L. Vincent, R. Djumeno, A. Artemov, L. Li</i>	

NON-CONVENTIONAL METHODS AND STATIGRAPHIC INTERPRETATION

A New Tool for Estimation of Gas Hydrate Saturation	2879
<i>D. Bhowmick, D.K. Gupta, A. Malhotra, U. Shankar</i>	
Numerical Modelling of Water Reinjection in Geothermal Structure	2884
<i>S.G. Kostyanov, S. Kocsardi, Z. Nagy, P. Szolgay</i>	
Detection of Seismic Impedance Interfaces Based on Singularity Analysis	2889
<i>W. Liu, S.Y. Cao</i>	
Seismic Sequence Analysis under Constraint of Log Sequence	2894
<i>S. Mingjun</i>	

NMO AND STACKING

Time-frequency Transform Based NMO Correction with Auto-mute	2899
<i>D.C. Adams, D. Markus</i>	
Three Dimensional Generalized Nonhyperbolic Moveout Approximation - Application on a 3D HTI Model	2904
<i>Q. Hao, A. Stovas</i>	
Generalized Group- and Phase-domains Moveout Approximations for Converted-wave in a Horizontal and Homogeneous VTI Layer	2909
<i>Q. Hao, A. Stovas</i>	
Aspects of Residual Moveout after Downward Continuation	2914
<i>J.F. Schneider</i>	

PETROPHYSICS

Hydraulic Rock Typing Using Rock Friction Factor - Reynolds Number Type Curves	2919
<i>X. Wang, D. Tiab</i>	
Investigation on Log Responses of Bulk Density and Thermal Neutron in Coal Bed with Different Ranks	2924
<i>Z.Q. Mao, P.Q. Zhao, D. Jin, B.D. Sun, W. Sun, X. Pang</i>	
Elastic Properties Characterization and Pore System Evaluation Using Kuster-Toksös and Gassmann Models	2929
<i>L.C. Oliveira, I.A. Lima Neto, R.M. Misságia, M.A.R. Ceia, N.L. Archilha, L.T. Castro, F.R. Souza</i>	

Multi-scale Analysis on Sensitive Rock Physics Parameters in Tight Carbonate Reservoirs	2934
<i>J.H. Liu, J. Bao, T. Hu, H. Yu, Y.Q. Guo, Y. Yu</i>	

SEISMIC MODELLING I

Wave-Field Simulation in Anisotropic Media with Irregular Free Surface	2939
<i>Z.H. Ma, G.S. Xie, M. Li</i>	
Seismic Modeling in Anisotropic Medium with Topography by a Full Staggered-grid Finite-difference Method on Body-fitted	2944
<i>Q.Y. Li, Z.C. Li, J.P. Huang, N. Li, K. Tian</i>	
Frequency-Space Domain Simulation of Wave Propagation in Two-phase VTI Media Based on BISQ Model	2949
<i>Q.J. Yang, C. Liu, Z.Q. Guo, M.X. Geng, H.T. Lan</i>	
Elastic Full Waveform Inversion Using the Time-space Domain Adaptive Staggered-grid Finite-difference Method	2954
<i>Z.M. Ren, Y. Liu, X.C. Wei, T.S. Cheng</i>	
Dispersion Properties Analysis of Rayleigh Surface Wave in Viscoelastic Media	2959
<i>K. Tian, Z.C. Li, Y. Yang, J.P. Huang, N. Li, X.L. Cao</i>	
Numerical Modeling of 2D Elastic Wave Propagation in Porous VTI Medium Using Implicit Rotated Staggered Grid FD Method	2964
<i>E.J. Wang, Y. Liu, X.C. Wei, Y.X. Ji</i>	
Seismic Wavefield Modelling Using Simplified Viscoelastic Equations	2969
<i>R. Yang, W. Mao, X. Chang</i>	
Forward Modeling of P- and S-wave Separation in Viscoelastic Media	2974
<i>X.L. Cao, Z.C. Li, K. Tian, J.P. Huang, Y. Yang</i>	

SEISMIC INTERFEROMETRY – INNOVATIVE APPLICATIONS AND OBSERVATIONS

Interferometric Assessment of Borehole-geophone Clamping Quality	2979
<i>Y. Vaezi, M. van der Baan</i>	
Locating a Buried Cavity Using Ghost Scattered Waves in a Scale-model Experiment	2984
<i>U. Harmankaya, A. Kaslilar, B. Verstraeten, S. Creten, C. Glorieux, K. Wapenaar, D. Draganov</i>	
Turning Subsurface Noise Sources into Virtual Receivers by Multi-dimensional Deconvolution	2989
<i>Y. Liu, K. Wapenaar, B. Arntsen</i>	
Next Term in Frequency Influence on Green's Function Retrieval for Near Field Survey	2994
<i>P. Znak, B. Kashtan</i>	
Detection of Velocity Perturbation Based on Coda Wave Interferometry	2999
<i>J. Li, J. Tang, C. Sun, J. Xie, B. Fang, S. Xu</i>	
Case Study of Retrieval of Body-wave Reflections Using Ambient-noise Seismic Interferometry with Extra Noise Recordings	3004
<i>I. Panea, D. Draganov</i>	
Identification and Elimination of Surface-related Multiples Using Seismic Interferometry with Active Sources	3009
<i>B. Boullenger, D. Draganov</i>	
Experimental Passive Acoustic Imaging and the Role of Stationary Phase Zones	3014
<i>S. Nakhaee, R. Sprik</i>	

POTENTIAL FIELDS

A Single Euler Solution Per Anomaly	3019
<i>F.F. Melo, V.C.F. Barbosa, L. Uieda, V.C. Oliveira Jr, J.B.C. Silva</i>	
Gravity Anomalies of Polygonal Sheets With Linear Density Variation	3024
<i>H. Holstein, D. Hillan, D.J. Fitzgerald</i>	
Mapping Basement Structures in the Northwestern Offshore of Abu Dhabi from High-resolution Aeromagnetic Data	3029
<i>A. Salem, M. Ali</i>	
Estimation of Source - Edge and Basement Depth Estimation Using Gravity-magnetic Data in North-eastern India	3034
<i>G.K. Ghosh, R. Dasgupta</i>	
Integrated Gravity and Seismic Data Interpretation for Basement Depth Estimation in Sadiya Area of Assam-Arakan Basin	3039
<i>G.K. Ghosh, R. Dasgupta</i>	
A Tool for Analysing Depth Resolution in Potential-field Inversion - Application to the Neapolitan Volcanic Area	3044
<i>V. Paoletti, P.C. Hansen, M.F. Hansen, M. Fedi</i>	
Global and Arctic Marine Gravity Field From Recent Satellite Altimetry (DTU13)	3049
<i>O. B. Andersen, P. Knudsen, S. Kenyon, S. Holmes</i>	
Kumzhinsky Deposit Structure Study by Gravity Data	3054
<i>A.A. Chernov</i>	

BUILDING AND UPDATING OF SUBSURFACE 3D MODELS

Dynamic Modeling and Validation Techniques for 3D Subsurface Interpretations - Impact on Volume and Reserve Estimates	3059
<i>C.M. Luneburg, R. Rattliff, A. Page</i>	
Incorporating Rock Types, Pore Systems and Capillary Forces in the Modeling of Water Saturation in Carbonate Reservoirs	3064
<i>T. Ait-Ettajer, L. Fontanelli</i>	
The Geological Structure of the Netherlands Continental Shelf - Results of a Detailed Mapping Project	3069
<i>J.H. ten Veen, J.C. Doornenbal, M. den Dulk, S.F. van Gessel, N. Witmans</i>	
Geomodeling of Structurally Complex Reservoir-Matachin Sur Field Case (Upper Magdalena Valley, Colombia)	3074
<i>J.L. Saavedra, M.F. Hurtado, F.D. Robles</i>	
A Case Study Using the Beam-Derived Wavelet Attributes within Velocity Model Building	3079
<i>X. Lu, A. Lewis, S. Whitehead, R. Cooper, T. Bell, B. Santos-Luis</i>	
3D Laplace-domain Full Waveform Inversion using CUDA	3084
<i>J. Kwon, J. Shin, W. Ha, C. Shin</i>	
Building of Jurassic 3D Modeling and Expanding of Petroleum Exploration Domains in Turpan-Kumul Basin, Northwest of China	3089
<i>Z. Yang</i>	
A Pragmatic Approach for Depth Conversion - How Deep is the Reservoir Level? – Case Study, Aishwariya Field, Barmer Basin	3094
<i>H. Harshvardhan, A. Tiwari, S.K. Singh</i>	

EXPLORATION AND FIELDS – CASE HISTORIES

Gas Chimney Record in Seismic and Surface Geochemical Data - Case Study From the Carpathian Foredeep (SE Poland)	3099
<i>P. Marzec, H. Sechman, K. Pietsch, S.J. Por?bski, P. Guzy, G. Izydor</i>	
The Falkland Basins - New Structural Model and Hydrocarbon Bearing Prospects (by Remote Sensing and Geoelectric Data)	3104
<i>S.P. Levashov, M.A. Yakymchuk, I.N. Korchagin, V.G. Bakhmutov, V.D. Soloviev, D.N. Bozhezha</i>	
Geoelectric Structures Disclosed by Magnetotellurics in the Jarud Basin and its Implications for Shale Gas	3109
<i>W.J.Z. Zhao, S.W.C. Chen, J.G.Z. Zhao, G.B.C. Cao</i>	
Advancing in the Black Sea Basin Hydrocarbon Exploration - Geological Achievements vs. Industry Pitfalls	3114
<i>A.A. Kitchka, T.I. Dovzhok, S.G. Vakarchuk, S.V. Orach, I.A. Orach</i>	
Techniques and Results of Progressive Exploration In the Development Area, Block 1-2-4, Sudan	3119
<i>J.C. Dong, G.A. Yang, C.Q. Li</i>	
Strike-Slip Fault System Characterization and Its Implication to Hydrocarbon Entrapment in the Puja High, South Sumatra	3124
<i>A.B. Samudra, J. Jaenudin, Y.A.M. Mizani, Y.S. Surtiati</i>	
A New Seismic Survey shines New Light through Old Windows in the Netherlands	3129
<i>L.M. Barends, A. Confurius, D. Vaxelaire, P. Le Garrec, B. Santos-Luis, P. Bauer</i>	
Use of Duplex Wave Migration for Examination of Irregularities in Subsalt Carbonates in the Pre-Caspian Depression	3134
<i>K.O. Iskaziyeiev, S.G. Karimov, N.I. Yasafova, R.V. Kudakaev, E.G. Khabibullin, E.V. Rastegaeva, Y.I. Denisov, N. Marmalevskiy</i>	

BOREHOLE SEISMICS AND ACOUSTIC LOGGING

Multi-offset Vertical Seismic Profile Acquisition with Hybrid Optical-electrical Wireline Cable	3139
<i>A.H. Hartog, B. Frignet, D. Mackie, W. Allard</i>	
The Relationship between the Signal-to-Noise Ratio of Downhole Data and Vibroseis Source Parameters	3144
<i>T. Dean, J. Tulett</i>	
VSP Reverse Time Migration Using Both Primaries and Multiples Based on the Adaptive Optimal Finite-difference Scheme	3149
<i>X.H. Cai, Y. Liu, J.M. Wang, W.H. Wang</i>	
Diamond Drill-bit Seismic-While-Drilling Velocity Analysis Using Semblance and MUSIC from Hillside, South Australia	3154
<i>B. Sun, A. Bona, A. King, B. Zhou</i>	
Azimuthal Acoustic Reflection Logging Imaging by Using Dipole Acoustic Data	3159
<i>J.X. Li, G. Tao, K. Zhang, Q. Ye</i>	
Borehole Acoustic Reflection Imaging with High Resolution Azimuth Estimation	3164
<i>C. Li, W.Z. Yue</i>	
Numerical Study on the Characteristics of Multipole Acoustic Logging While Drilling in Cracked Porous Formations	3169
<i>S. Xu, Y.D. Su, X.L. Chen, X.M. Tang</i>	
Acoustic Reflection Signals Extraction by Applying Blind Signal Separation	3174
<i>J.X. Li, G. Tao, K. Zhang, H. Liu</i>	

RESERVOIR CHARACTERIZATION – CASE STUDIES

Cuttings (Re)evaluation - Making the Most of 'Minced meat' Despite Drill-bit Metamorphism	3179
<i>W.J.E. van de Graaff, M. Felder</i>	
Fractures in the Jurassic Arab Formation and Lower Fadhili Carbonate Member of the Dhurma Formation, Saudi Arabia	3184
<i>K.A.T. MacPherson, M.S. Ameen</i>	
Fracture Estimation Using Attenuation Attributes - A Case Study	3189
<i>S.Q. Chen, P. Huang, X.Y. Li, H.F. Zhang</i>	
Comparison of Different Techniques for Generating Stochastic Models Constrained with Seismic Information	3194
<i>K.E. Filippova</i>	
Sedimentology, Petrophysics and 3D Seismic Contributions to the Study of the Eastern Paris Basin Formations (France)	3199
<i>B. Yven, J.L. Mari</i>	
Advantages of Incorporating Seismic Extracted Geobody into Static Modeling. Example of Cohembi field, Putumayo-Colombia	3204
<i>J.A. Palencia Osorio, Y.C. Galvis, M.F. Hurtado</i>	
A New Approach Combining Image-based Petrophysics and Neural Network Analysis to Build Electrofacies in the 'Unayzah	3209
<i>G. Burmester, A.S. Alghannam, K.A.T. MacPherson</i>	

ROCK PHYSICS – CASE STUDIES AND STRESS DEPENDENCIES

Fluid Sensitivity of Rock Physics Parameters in Sandstone - Quantitative Analysis	3214
<i>Y.Q. Guo, H.D. Ma, J. Ba, H.B. Zhao, C.X. Long, H.C. Wang, J. Liu</i>	
Cementation, Mineralogical, Fluid and Textural Influence on Petrophysical and Acoustic Properties of Stø Reservoir Sands	3219
<i>O.Y. Ogebulu, N.H. Mondol, J. Jahren</i>	
Estimation of Rock Physics Properties and Gas Saturation from Time-lapse Full Waveform Inversion Data	3224
<i>B. Dupuy, H.M. Balhareth, M. Landro, A. Stovas</i>	
P-impedance Inversion - A Fit for Purpose Technique for Reservoir Characterization, Mangala Field, India	3229
<i>A. Malkani, S. Somasundaram, V. Ravichandran, S. Mukherjee, P. Hansen, S. Mishra</i>	
Experimental Observations of the Effects of Fracture Scale on Elastic Wave Velocity and Anisotropy	3234
<i>P.B. Ding, B.R. Di, J.X. Wei, X.Y. Li</i>	
Comparison of P- and S-wave Velocities in a Transversal Isotropic Sandstone and a Shale under Uniaxial Loading Condition	3239
<i>S.I. Mayr, V. Sviridov, S.A. Shapiro</i>	
Modeling the Acoustic Hysteresis of P and S Wave Velocity	3244
<i>J. Somogyi Molnar, A. Kiss, M. Dobroka</i>	
Velocity Anisotropy of Unconsolidated Sands and its Relation to Induced Stress Response	3249
<i>S. Narongsirikul, N.H. Mondol, J. Jahren</i>	

ENVIRONMENTAL AND ENGINEERING APPLICATIONS OF NEAR SURFACE GEOPHYSICS

Studying the Fracture System of a Landslide by ERT Method	3254
<i>S. Szalai, A. Novák, M. Metwaly, B. Neduczka, E. Törös, K. Szokoli</i>	
Transient Self Potential Inversion for the Simultaneous Estimation of Hydraulic Conductivity and Specific Storage	3259
<i>Y. Ozaki</i>	
Near Surface Geophysical Information for Development of Socio-Economic Infrastructure of Oil and Gas Arctic Regions	3264
<i>O.K. Tyapkin, S.A. Onyshchenko</i>	
Hydrogeologic Modelling of a Rockmass in an Abandoned Mine in Korea	3269
<i>H. Baek, Y. Choi, D. Kim, S. Park, J. Hong</i>	
Effects of Wave Components for Near-surface Imaging	3274
<i>H. Jiang</i>	
Using Multicomponent Seismic to Study the Permafrost	3279
<i>V.M. Kuznetsov</i>	
Using the Near-surface Coherent Noise to Constrain 1D Resistivity Inversion	3284
<i>C. Iacob, R. Orza, D. Jianu</i>	
Rayleigh Wave Inversion Using G-PSO Algorithm	3289
<i>Y.X. Lu, S.P. Peng, W.F. Du, D.K. He</i>	

INTEGRATED FIELDS AND SUSTAINABLE DEVELOPMENT

Regional Geophysical Criteria for Accident Prevention of the Donets Coal Basin Mining	3294
<i>I. Viktosenko, V. Kanin, M. Dovbnich</i>	
A Pareto-based Well Placement Optimization	3299
<i>A. Hashim Ahmed, A. Awotunde, O. Mutrif Siddig, M.S. Jamal</i>	

Lossless Compression Method for Downhole Correlative Waveforms Data	3304
<i>M. Cai, W. Qiao, X. Ju, X. Che, J. Lu</i>	
A Practical Method to Calculate the Productivity of a Horizontal Well for a Geothermal Project in the Netherlands	3309
<i>N. Buik</i>	
Plan of Development at Topaz Area, Indonesia	3314
<i>I. Yuliandri, M. Kurniawan, M. Latuconsina</i>	
A Review - Worldwide Guidelines to Mitigate the Effect of Seismic on Marine Mammals	3319
<i>M. Smithies</i>	
Treatment of Oily Waste Water from Cheshme Khosh Desalting Factory Using Reverse Osmosis	3324
<i>S. Ghadami Jegarluei, A.R. Moazzeni, M. Ghanbari, S. Azizi</i>	

STUDENT SESSION – EM, GRAVITY AND EARTHQUAKE SEISMOLOGY

Criteria of Electrical Anomalies Distinguishing for the Survey of Flooded Salt Mines	3329
<i>T. Ogneva</i>	
Three-dimensional Electromagnetic Responses of Disk-shaped Hydrocarbon Reservoir in Marine Sediments	3332
<i>H. Jang, H. Jang, H.J. Kim</i>	
Structural Information Inferred from Gravity Data in South-Central Georgia	3335
<i>L.E. Tonita, C. Badulescu</i>	
Directional Total Horizontal Derivatives of Gravity Gradient Tensor and their Application to Delineate the Edges	3338
<i>Y. Yuan, M. Geng</i>	
Edge Detection of Potential Field Gradient Tensor Data with Horizontal Second Order Directional Analytic Signal	3341
<i>Y. Yuan, Q.L. Yu, M. Geng</i>	
Time-frequency Analysis of Noisy Seismogram Using Modified S-transform	3344
<i>A.P. Gahlot</i>	
Generating Synthetic Receiver Functions Using Seismic Interferometry	3347
<i>V. Srivardhan</i>	
Calculation of Source Parameters for January 27, 2011 Rigan Earthquake (Iran)	3350
<i>S.N. Moeini</i>	

STUDENT SESSION – NEAR SURFACE

Near-Surface Geophysical Surveys at Neolithic Locality Petnica, Serbia	3353
<i>M. Vanic, B. Rajovic, D. Ferenci, M. Petkovic</i>	
Combined 2D Resistivity Imaging and Penetrometer-Based Resistivity Profiling – Example of Field Studies	3356
<i>G. Bania, M. ?wiklik</i>	
Georadar Exploration of the Pilat Dune, France	3359
<i>T. Jouen, F. Diaby, A. Diallo, Y. Diop, R. Douadi, C. Duverger, Y. Fall, A. Ibourichene, S. Ibrahim, M. Koffi-Bahewuet, S. Laoufi, M. Lefevre, H. Mahamat, M. Mahfoufi, S. Rajeul, L. Obiang, C. Roy, V. Thomas, J. Verdere, G. Occhipinti</i>	
ERT for the Detection of Unmapped Underground Cavities	3362
<i>S.R. Rajeul, V.T. Thomas, T.J. Jouen, S.M. Mohammad, A.M. Maineult</i>	

STUDENT SESSION – WATER RESOURCES

Integrated Geoelectrical Resistivity and Geochemical Survey to Study Groundwater - a Case Study from Selangor, Malaysia	3365
<i>K. Khaki, Y. Yusoff, I. Islami</i>	
Study of a Dung Heap Impact on Electrical Properties of a Subsurface Zone - Geoelectrical Research	3368
<i>G. Bania, M. ?wiklik</i>	
Inflow Analysis of Lake Uromiyeh, Iran	3371
<i>H. Maazallahi, A.E. Corbin</i>	

STUDENT SESSION – SEDIMENTOLOGY AND STRUCTURAL REGIONAL GEOLOGY

Basin Modelling of a Regional Transect in the Western Black Sea	3374
<i>A. Oteleanu, R. Olaru, T. Rainer, G. Tari</i>	
The Sedimentology and Sequence Stratigraphy of Early Cambrian Kussak Formation, Salt Range Pakistan	3377
<i>M. Zain ul Abedin, W. Iqbal</i>	
Regional Geology and Tectonic Settings in the Muglad Basin of Western Sudan	3380
<i>M.M.E Elmahi, P. Eriksson</i>	
Analysis of Depositional Systems and Sequences of “Ray” Field, Onshore Niger Delta Basin, Nigeria	3383
<i>J.R. Onayemi, S. Oladele</i>	
Reconstruction of Depositional Environment and Geological Development of Harz Mountains	3388
<i>J. Balzer</i>	
Athabasca Regional Geophysical Study - Implications for Geothermal Development in Northeastern Alberta, Canada	3391
<i>E.P. Ardakani, D.R. Schmitt</i>	

Paleomagnetic Constraints on the Chronology and Geodynamics of the Dacian Basin – Eastern Paratethys	3394
<i>R. Stanca, D.V. Palcu</i>	
The Focal Mechanisms from the Seismic Zones within Greater Caucasus	3397
<i>F. Aliyev</i>	

STUDENT SESSION – SEISMIC INTERPRETATION AND RESERVOIR CHARACTERISATION

The Analysis of Multiple Waves Influence on Seismic Image in the Rotliegend Formation - Polish Lowland	3401
<i>M. Kasperska, K. Cichost?pski, M. Niepsuj</i>	
Influence of the Seismic Attenuation on the AVO Analysis in Miocene Strata from Carpathian Foredeep - SE Poland	3404
<i>K. Cichost?pski, M. Kasperska</i>	
The Analysis of AVO Dispersion Attributes in Thin Tight Inter-layer Reservoirs	3407
<i>W. Hu, L.G. Han, P. Zhang</i>	
Correction of Thin-bedded Horizon Structural Model with Integration of Spectral Decomposition of Seismic Data and Loggin Result - Case Study in West Siberia	3410
<i>A. Masoud</i>	
Development of Software for Processing Microseismic Data with Application to Observation of Shear-wave Splitting	3413
<i>G. Loginov</i>	
Non-convex Seismic Acoustic Impedance Inversion	3416
<i>A. Najafabadipour, H. Mohammadi Gheymasi, A. Gholami</i>	
Analysis of Channels Using Acoustic Impedance and Spectral Decomposition within Cenomanian–Turonian Reservoir in Iran	3419
<i>M.S. Mirkamali, N. Shad Manaman, I. Abdollahie Fard, N. Keshavarz Farajkhah, H. Khoshdel, A.H. Najafabadipour</i>	
Revealing the Strike-slip Fault Planes in the Persian Gulf	3422
<i>M.S. Mirkamali, N. Keshavarz F.K, H. Ramesh, A.H. Najafabadipour</i>	

DIFFRACTION MODELLING AND IMAGING

Manifestation of Fluid Saturation in Scattered Waves - Numerical Experiments and Field Study	3425
<i>G. Reshetova, V. Lisitsa, A. Merzlikina, V. Pozdnyakov, V. Shilikov</i>	
Post-stack Diffraction Imaging Using Reverse-time Migration	3430
<i>I. Silvestrov, R. Baina, E. Landa</i>	
Diffraction Imaging in the North Sea, Case Study Over the Dutch Q16 Fields	3435
<i>R. Veenhof, T.J. Moser, I. Sturzu, D. Dowell, A.M. Popovici, F. Nieuwland</i>	
Multifocusing 3D Diffraction Imaging for Detection of Fractured Zones in Mudstone Reservoirs - Case Study	3440
<i>A. Schoepp, S. Labone, A. Berkovich, E. Landa</i>	

VOLUME 5

NMO AND STACKING

Auxiliary Media - A Generalized View on Stacking	3445
<i>B. Schwarz, C. Vanelle, D. Gajewski</i>	
Inversion Based Accuracy Comparison of Non-hyperbolic Moveout Approximations for P-waves in VTI Media	3450
<i>M. Asgharzadeh, D. Nadri, A. Bona</i>	
Operator-oriented Stacking and Azimuth-dependant Stacking Velocities in CRS Imaging	3455
<i>G. Hoecht, F. Rost, E. Lüschen</i>	
Global Optimization of the Parameters of the Common Reflection Surface Traveltime Using Differential Evolution	3460
<i>T. Barros, R. Krummenauer, R. Ferrari, R. Lopes</i>	

IMPACT OF ENHANCED NEAR SURFACE CHARACTERIZATION ON EXPLORATION TARGETS

Near Surface Velocity Model of the Dukhan Field from Microgravity and Resistivity to Enhance PSDM Seismic Imaging	3465
<i>K. Setiyono, S. Gallo, C. Boulanger, F. Bruere, F. Moreau, B. Rondeleux</i>	
Near-surface Modelling in Shallow Marine Environments Using Surface and Guided Waves	3470
<i>D. Boiero, E. Wiarda, L.R. West, P. Vermeer</i>	
Near-Surface Characterization Using Simultaneous Joint Inversion of Refracted and Surface Waves – A Case Study	3475
<i>M. Speziali, S. Re, M. Clementi, L. Viertel Herrera, A. Al Quadi, M. Mahmood Mosa</i>	
A Two-Phase Automatic Converted-Wave Statics Correction Method	3480
<i>Y. Sun, T. Tonellot, B. Kamel, A. Bakulin</i>	
Supervirtual S-wave Refraction Interferometry for Converted Wave Statics and Near-surface S-wave Velocity Model Building	3485
<i>Y. Vaezi, K. DeMeersman</i>	

Application of Improved Interferometry on Low SNR Data to Auto-pick First Arrivals	3490
<i>S.P. An, X.H. Liang, T. Hu, G.X. Peng</i>	
Technique and Application of Near-Surface Q Estimation and Compensation	3495
<i>B.Q. Zhang, Y.L. Liu, T.J. Zeng, Q.G. Liu, L.Q. Zhang, H.S. Sun, R. Li</i>	
An Interferometric Solution for Non-stationary Shear-wave Statics	3500
<i>R. Cova, D. Henley, K. Innanen</i>	

CO2 SEQUESTRATION MONITORING

4D Imaging of the Ketzin CO2 Storage Site (Germany) Using a Combination of Seismic and Electrical Resistivity Imaging	3505
<i>P. Bergmann, M. Ivandic, B. Norden, C. Rücker, D. Kiessling, C. Schmidt-Hattenberger, S. Lüth, C. Juhlin</i>	
Spatial Resolution in Bayesian Inversion of Gravimetric Data	3510
<i>V.L. Hauge, O. Kolbjørnsen</i>	
Integration of Reservoir Simulation with 3D Reflection Seismic Time-lapse Data at Ketzin	3515
<i>F. Huang, C. Juhlin, T. Kempka, B. Norden</i>	
Numerical Feasibility Study for Borehole Magnetometric Resistivity Monitoring of CO2 Storage in Deep Saline Reservoirs	3520
<i>A. Bouchedda, B. Giroux</i>	

RESERVOIR SIMULATION – IMPLEMENTING NEW TECHNIQUES

New Approaches to Upscaling Fault Zones for Flow Simulation	3525
<i>M.S. Islam, T. Manzocchi</i>	
Implementing Hydraulically Fractured Wells for Reservoir Simulation Purposes - A Pragmatic Approach	3530
<i>N. Dousi, A.N.P. Dros</i>	
Improve Oil Recovery Using Fluidic Diode Autonomous Inflow Control Devices (AICD) Modeled and Coupled With a Simulator	3535
<i>M. Torres, G.A. Carvajal, A. Chacon, B. Least</i>	
An Analytical Criteria to Merge Layers of a Geological Model: First Tests and Validations	3540
<i>C. Preux, A. Fourno</i>	

ENHANCED HYDROCARBON RECOVERY I

Experimental Work on the Molecular Diffusion in the Carbonated Water (CW) Flooding Process at Reservoir Conditions	3545
<i>A.E. Peksa, K.H.A.A. Wolf</i>	
Effect of Pressure on Wetting Properties of Crude Oil, Sandstone Rock, Water, CO2 and (or) Flue Gas System	3550
<i>N. Shojai Kaveh, A. Ameri Ghasrodashti, W.R. Rossen, J. Bruining, K.H.A.A. Wolf</i>	
How to Co-optimize Oil Recovery and CO2 Storage during CO2 EOR - A Laboratory Study	3555
<i>F. Kamali, F. Hussain, Y. Cinar</i>	
Impact of Ionic Exchanges between Active and Non-active Ions on Displacement Efficiency in Smart Waterflood Application	3560
<i>A.N. Awolayo, H.K. Sarma, A.M. AlSumaiti</i>	
Cation Interference in Low Salinity Water Injection in Sandstone Formation	3565
<i>F. Srisuriyachai, N. Muchalintamolee</i>	
Effect of Salinity and Specific Ions on Amount of Bound Water on Quartz, Calcite and Kaolinite, as Observed by NMR T2	3570
<i>M.M. Alam, K. Katika, I.L. Fabricius</i>	
Gas Flooding Performances in Rocks with and without Wettability Alteration to Gas-wetness	3575
<i>K. Li</i>	
Intelligent Water-Alternating-Gas Process Using Downhole Control Valve (WAG-CV) - Concepts, Tools and Optimization Proces	3580
<i>G.A. Carvajal, M. Konopczynski, A. Chacon, J.L. Mogollon, S.P. Knabe</i>	

AVO-AVA ANALYSIS – CASE HISTORIES

Analysis of Sensitive Factors Affecting Pre-stack Simultaneous Inversion	3585
<i>Z. Zou, Y. Ling, L.B. Zhang, X.Y. Xi, X.Y. Guo</i>	
Resolving Prospective Pay Zones Through Interpretation and Simultaneous Inversion of Spectrally-Broadened Seismic Data	3590
<i>G. Porfiri, X.E. Refunjol, J.P. Castagna</i>	
AVO Interpretation of a Gas Bearing Sand Reservoir Encased in Its Source Rock	3595
<i>P. Alvarez, W. Marin, F. Bolivar, M. Di Luca, T. Salinas</i>	
Lithology Discrimination Using Elastic Rock Properties and Seismic Inversion in the Leduc Reservoir, NE Alberta, Canada	3600
<i>E.P. Ardakani, T.J. Podivinsky</i>	

3D Seismic Prestack Inversion for Predicting Fracability Attributes - A Case Study in North Kuwait	3605
<i>T. Chen, T. Al-Rashed, R. Husain, P. Singh, M. Evdokimova</i>	
Tonto Field - The Application of AVO Inversion to Fast-track Development of a New Small Field at Forties	3610
<i>G. Byerley, J. Pyle, J. Towart</i>	
Using AVO to Evaluate a Thin Pa - A Norwegian Case Study	3615
<i>B.J. Paternoster, P.O. Lys, V. Marlot, M. Vedvik</i>	
The Synergy Between PS and PP for Reservoir Definition - Applying Simultaneous Joint PP-PS Inversion for Oseberg South	3620
<i>M. Paydayesh, M.A. Leathard, J. Mathewson</i>	

ROCK PHYSICS MODELS, ABSORPTION AND ANISOTROPY

Seismoelectric Measurements in an Artificial Porous Sample with Anisotropic Permeability	3625
<i>Z. Zhu, M.N. Toksöz</i>	
Experimental Investigation of Elastic Weakening Effects from Water Adsorption in Sedimentary Rocks	3630
<i>L. Pimienta, J. Fortin, Y. Guéguen</i>	
Monitoring of Fluid Substitution in Rocks Using Passive Ultrasonic Interferometry	3635
<i>S. Barbouteau, P.N.J. Rasolofosaon, N. Dubos-Sallée</i>	
Double Shell As a Directly Solvable Model of a Micro-inhomogeneous Poroelastic Medium	3640
<i>S.M. Glubokovskikh, B. Gurevich</i>	
A Laboratory Study of Qs/Qp and Vp/Vs Ratios for Water Saturation Estimate in Fractured and Non-fractured Sandstones	3645
<i>K. Amalokwu, A.I. Best, J. Sothcott, M. Chapman, T. Minshull, X.Y. Li</i>	
Investigating Reservoir Characteristics by Mapping P Wave Velocity Dispersion	3650
<i>L.F. Sun, B. Milkereit</i>	
Does Dipole Dispersion Crossover Indicate Borehole Stress-induced Anisotropy?	3655
<i>X.D. Fang, M. Fehler</i>	
Estimating Azimuthal Stress-induced P-wave Anisotropy from S-wave Anisotropy Measured by VSP	3660
<i>O. Collet, B. Gurevich</i>	

SEISMIC MULTIPLE ATTENUATION II

OBC Surface Multiple Prediction Using Seismic Interferometry	3665
<i>K.L. Yang, L.B. Liu, B. Hung, J. Zhou, B. Zhou, Z.L. Wang, X.D. Gong</i>	
Closed-Loop SRME - A New Direction in Surface Multiple Removal Algorithms	3670
<i>G.A. Lopez, D.J. Verschuur</i>	
Multiple Suppression with Sparse Constraints in Local Tau-p Domain	3675
<i>W.Q. Sun, H.Z. Wang, J.T. Hu, S.W. Liu</i>	
Post-migration Multiple Attenuation by Mixed Dip and Residual Moveout Filtering	3680
<i>P. Hugonnet, J.L. Boelle, F. Prat, M. Hular, E. Godart, E. Bruthiaux</i>	
Short-period Multiple Attenuation in Imaging Domain - Use of Primaries to Predict Multiples	3685
<i>J. Tang, A. Lau, C.C. Shih, C. Peng</i>	
3D Inverse Scattering Series Method for Internal Multiple Attenuation	3690
<i>M. Wang, B. Hung</i>	
Discriminating Primaries and Multiples in Reflection Seismic Data	3695
<i>G.A. Meles, A. Curtis</i>	
Interbed Multiple Attenuation in Kuwait - A Minagish Case Study Revisited	3700
<i>F. Xavier de Melo, Z. Wu, C. Kostov, W. Dragoset, S. Khalil, A. El-Emam, H. Bayri</i>	

AVO & INVERSION

Obstacles, Challenges and Strategies for Facies Estimation in AVO Seismic Inversion	3705
<i>J.S. Gunning, M. Kemper, A. Pelham</i>	
A New Non-linear AVO Inversion Method and Its Application in the Prediction of Carbonate Reservoirs	3710
<i>L.F. Liu, X.Y. Zhou, Z.D. Sun, X.L. Deng, B. Jing, Y.Y. Pan, H.T. Zhao, Y. Neng</i>	
Introducing Ji-Fi - A New State-of-the-art Seismic Inversion System	3715
<i>M.A.C. Kemper</i>	
AVA Hydrocarbon Indicator from Least-squares Inversion Based on a Quadratic Form of Zoeppritz's Equations	3720
<i>R. Negrete Cadena, A. Booth</i>	
AVA Attributes for Lithology and Fluid Discrimination Based on a Quadratic Form of Zoeppritz's Equations	3725
<i>R. Negrete Cadena, Y. Wang, J. Morgan</i>	
Using the Stack Impedance Equation to Invert Elastic Parameters	3730
<i>J.Y. Gui, J.H. Gao, S.J. Li, W.L. Wang</i>	
High-Resolution Anisotropy from AVO	3735
<i>L.A. Thomsen, R. Lin</i>	
Analyzing Seismic Azimuthal Amplitude by Fourier Decomposition	3740
<i>J. Haberfeld, B. Deschizeaux, A. Khalil, M. Ibram</i>	

MICROSEISMIC INSTRUMENTATION AND DETECTION

Microseismic Network Performance Estimation Without a Catalogue - Avoiding False Negatives in Traffic Light Protocols	3745
<i>N.J. Ackerley, D.W. Greig</i>	
Seismometer's Performance Monitoring during an Intensive Field Measurement	3750
<i>W. Suryanto, P. Wahyudi, A. Sukotjo, A. Guntara, F. Mu'in, T. Suroso, A. Susanto</i>	
Comparison of Noise Characteristics on an Un-trenched and Trenched Cable Deployed in the North Sea for a PRM System	3755
<i>L.W. Bjerrum, T. Matveeva, J.E. Lindgård, H.I. Rutledal, A.C.S. Yde</i>	
Use of Surface Seismic Patches for Hydraulic Fracture Monitoring	3760
<i>S. Schilke, T. Probert, I. Bradford, A. Özbek, J.O.A. Robertsson</i>	
Common-receiver Gathers as a Tool for Analysis of Microseismic Waveforms and Quality of Time Picks	3765
<i>A. Reshetnikov, S.A. Shapiro</i>	
Microseismic Event Discrimination with Full-waveform Correlations	3770
<i>K. Van Wijk, D. Fagan, P. Shrestha, J. Rutledge</i>	
Refinement of Arrival-time Picks Using an Iterative, Cross-correlation Based Workflow	3775
<i>J. Akram, D. Eaton</i>	
Using Surface and Downhole Data to Drive Developments in Event Detection Algorithms	3780
<i>M.J. Williams, J.H. Le Calvez, A. Gendrin</i>	

SHALE AND TIGHT RESERVOIRS

Microstructural Investigation of the Whitby Mudstone (UK) As an Analog for Posidonia Shale (NL)	3785
<i>M.E. Houben, A. Barnhoorn, M.R. Drury, C.J. Peach, C.J. Spiers</i>	
Sweet Spot Identification and Smart Development - An Integrated Reservoir Characterization Study of a Posidonia Shale of a Posidonia Shale Outcrop Analogue	3790
<i>J.H. ten Veen, R.M.C.H. Verreussel, D. Ventra, M.H.A.A. Zijp</i>	
CAL-GT-01 - Implications for the Distribution of the Early Namurian Geverik Member in the Netherlands	3795
<i>M.J. Harings</i>	
Multi-scale 3D X-Ray Tomography, MICP and Low Field NMR for Tight Gas Sandstones Pore Structure Characterization	3800
<i>M. Schmitt, C. Peres Fernandes, J.A. Bellini da Cunha Neto, C.P. Rahner, V. Sampaio Santiago dos Santos</i>	
Unconventional Reservoir Characterization with Geomechanical Attributes of Multi-az. Inversion - Barnett Shale Application	3805
<i>M. Adelinet, A. Barnoud, V. Clochard, N. Delepine, P. Ricarte</i>	
Effective Fracture Treatment Design - Best Results in Shale Reservoirs	3810
<i>C.H. Smith, A. Bashkirtseva</i>	
Seismic Amplitude Modelling Study for a Silurian Source Rock	3815
<i>M.K. Broadhead, S.G. Cheshire</i>	
Characterizing a Canadian Shale Gas Reservoir - A Quantitative Interpretation Case Study	3820
<i>L.M. Weston Bellman, J. Leslie-Panek</i>	

DEEP WATER SEDIMENTARY SYSTEMS

Saucer-shaped Sandstone Intrusions - A Global Deepwater Play?	3825
<i>M. Huuse, D. Bureau, A. Hurst, D. Suek</i>	
Deepwater Depositional Architecture and Evolution in the Rio Muni Basin, West Africa	3830
<i>Z.C. Xu, F.L. Lu, G.Z. Fan, D.L. Shao</i>	
Study of Deepwater Turbidite Elements in Myanmar	3835
<i>G. Zuo, F.L. Lu, G.Z. Fan, D.L. Shao, H. Sun</i>	
Producing Pore Pressure Profiles Based on Theoretical Models in Un-drilled Deep-water Frontier Basins	3840
<i>S.A. O'Connor, S. Green, W. Goodman, N. Heinemann, A. Edwards, J. Carter, D. Cameron</i>	

PLATE TECTONICS AND PALEOGEOGRAPHY

Residual Gravity for Plate Tectonic Modelling Based on Global Gravity Model Analysis	3845
<i>C.M. Green, J.D. Fairhead, S.M. Masterton, P.J. Webb</i>	
Insights from a Newly Merged High-resolution Gravity and Magnetic Dataset on the Faroe-Shetland Margin	3850
<i>S.J. Rippington, S. Mazur, C. Anderson</i>	
Is the Eurasia-Cimmeria Collision Linked to Pangea Breakup?	3855
<i>D.F. Keppie</i>	
Tectonics and Petroleum Prospectivity in South East Asia - A Tertiary Play Model in Myanmar, Bangladesh & Manipur, India	3860
<i>M. Pathak, J. Craig, B. Thusu</i>	

GEOMECHANICS AND FRACTURE PROPAGATION

From Geomechanical Modelling to Seismic Imaging of 3D Faults	3865
<i>C. Botter, N. Cardozo, S. Hardy, I. Lecomte, A. Escalona, N. Cooke, G. Paton</i>	
Geomechanical Velocity Model Building	3870
<i>A. Rodriguez-Herrera, O. Zdraveva, N. Koutsabeloulis</i>	
Fracture-fault Networks and Role of Nested Topology on the Mechanical Response and Connectivity for Tight Gas Extraction	3875
<i>N.J. Hardebol, G. Bertotti</i>	
Quantifying Salt Induced Stress Anomalies to Assist in Targeting Wells Near Salt Welds	3880
<i>S. Grebe, H.L.J.G. Hoetz</i>	
A Geomechanical Approach to Predicting Fracture Behaviour - An Example from the Gorm field, Danish North Sea	3885
<i>D.J. Quinn, B. Freeman, B. Jaarsma, M. Arnhild, C.G. Dillon</i>	
A Partition of Unity Based Model for Hydraulic Fracturing	3890
<i>E.W. Remij, J.J.C. Remmers, J.M. Huyghe, D.M.J. Smeulders</i>	
Sub-critical Crack Propagation in Glass in Reservoir Conditions	3895
<i>C. Mallet, J. Fortin, Y. Guéguen, F. Bouyer</i>	
Elastic Rock Heterogeneity Controls Brittle Rock Failure during Hydraulic Reservoir Stimulation	3900
<i>C. Langenbruch, S.A. Shapiro</i>	

MULTI-PARAMETER FWI

Parametrization for 2-D SH Full Waveform Inversion	3905
<i>P. Bharadwaj, W.A. Mulder, G.G. Drijkoningen</i>	
FWI-guided Q Tomography for Imaging in the Presence of Complex Gas Clouds	3910
<i>J. Zhou, X. Wu, K. Teng, Y. Xie, F. Lefeuvre, I. Anstey, L. Sirgue</i>	
On the Velocity-density Ambiguity in Acoustic Full-waveform Inversion	3915
<i>A. Guitton</i>	
Multiparameter Full-waveform Inversion for Acoustic VTI Medium with Surface Seismic Data	3920
<i>X. Cheng, K. Jiao, D. Sun, D. Vigh</i>	
Multi-parametric FWI Using a New Parameterisation for Elastic VTI Media	3925
<i>J.W. Oh, D.J. Min</i>	
Land Seismic Data Multi-parameter Waveform Inversion	3930
<i>A. Stopin, R.E. Plessix</i>	
Towards High-frequency Full Waveform Inversion - A Case Study	3935
<i>B. Qin, V. Prioux, H. Bi, A. Ratcliffe, J.P. Montel, D. Carotti, G. Lambaré</i>	
Using Full Waveform Inversion to Update Anisotropy - A North Sea Case Study	3940
<i>N. da Silva, A. Ratcliffe, G. Conroy, V. Vinje, G. Body</i>	

IMAGE DOMAIN-ASSISTED FWI

Inversion of Seismic Refraction and Reflection Data for Long-wavelength Velocity Model	3945
<i>H. Wang, S. Singh, F. Audebert, H. Calandra</i>	
Reflection FWI for both Reflectivity and Background Velocity	3950
<i>G. Yao, M. Warner, A. Silverton</i>	
An Interferometry-Based, Subsurface-Domain Objective Function for Targeted Waveform Inversion	3955
<i>I. Vasconcelos, M. Ravasi, J. van der Neut</i>	
FWI and MVA the Natural Way	3960
<i>T. Alkhalifah, Z. Wu</i>	
Adaptive Waveform Inversion - FWI Without Cycle Skipping - Theory	3965
<i>M. Warner, L. Guasch</i>	
Adaptive Waveform Inversion - FWI Without Cycle Skipping - Applications	3970
<i>L. Guasch, M. Warner</i>	
Combining Diving and Reflected Waves for Velocity Model Building by Waveform Inversion	3975
<i>W. Zhou, R. Brossier, S. Operto, J. Virieux</i>	
Full Waveform Inversion Using Free-Surface Related Multiples as Natural Blended Sources	3980
<i>Y. Wang, Y. Zheng, X. Chang, Z. Yao</i>	

EM MODELLING

Energizing a Bipole Casing Electromagnetic Source - Sensitivity Analysis	3985
<i>N. Cuevas</i>	
Forward Modelling of Geophysical Electromagnetic Data on Unstructured Grids Using a Finite-volume Approach	3990
<i>H. Jahandari, C.G. Farquharson</i>	
A Potential Method for Three-dimensional Numerical Modeling of Geophysical Electromagnetic Problems	3995
<i>S. Ansari, C. Farquharson</i>	

A Low-rank Approximation to the Hessian for 3D CSEM Gauss-Newton Inversion	4000
<i>M. Amaya, L. Boman, J.P. Morten</i>	
An Approximate 3D Computational Method for Real-time Computation of Induction Logging Responses	4005
<i>S. Bendsdorp, S.A. Petersen, P.M. van den Berg, J.T. Fokkema</i>	
Topographic Modelling Using a Particle Method in 3D Controlled-source Electromagnetic Exploration	4010
<i>N. Imamura, T. Goto, J. Takekawa, H. Mikada</i>	
Estimation of Induction Noise in a Towed EM Streamer	4015
<i>A.L. Tcheheumeni Djanni, A. Ziolkowski, D. Wright</i>	
Geostatistical Joint Inversion of Seismic and Electromagnetic Data	4020
<i>L. Azevedo</i>	

IMPROVEMENTS IN VELOCITY MODEL ESTIMATION

Are the South Atlantic Albian Carbonates Anisotropic? Validation of PSDM Parameters from WVSP Analysis	4025
<i>J.L. Lewis, K. Jantz, Z. Patval</i>	
A Comprehensive Anisotropic Velocity Model Building Case Study - Tengiz Full Azimuth Land TTI PSDM	4030
<i>A. Searle, H. Xing, E. Iskakov, K. Jazbayev, S.D. Jenkins, K.S. Lee, N. McLean</i>	
Unifying Tomography & Pre-stack Anomaly Detection in PreSDM to Correct for Near Surface Channels in Exploration Settings	4035
<i>J.I. Selvage, Ø. Korsmo, C.E. Jones, G. Rønholt</i>	
Sub-salt Velocity Model Building with RTM Angle Gathers from Ocean-bottom Seismic Data	4040
<i>S. Gerritsen, I. Atakishiyev, A. Yin</i>	

JOINT INVERSION VELOCITY MODEL BUILDING METHODOLOGY

Cooperative, Structural and Grid-based Simultaneous Joint Inversion for Salt Base and Presalt Imaging	4045
<i>M. Mantovani, K. Hokstad, S. Trezzi, M.L. Navaza, K. Duffaut, T. Wiik, A. Lovatini, I. Guerra</i>	
2-D and 3-D Joint Inversion of Seismic, MT and Gravity Data from the Faroe-Shetland Basin	4050
<i>B. Heincke, M. Moorkamp, M. Jegen, R.W. Hobbs, C. Berndt</i>	
Integrated Interpretation and Simultaneous Joint Inversion of CSEM and Seismic Datasets - The Sunshine Case	4055
<i>F. Ceci, M. Clementi, I. Guerra, M. Mantovani</i>	

WIDE/MULTI-AZIMUTH ACQUISITION PROCESSING

Acquiring and Imaging Ultra High Density Land Seismic Data - Practical Challenges and the Impact of Spatial Sampling	4060
<i>A. Ourabah, M. Grimshaw, J. Keggins, M. Kowalczyk-Kedzierska, J. Stone, E. Murray, S. Cooper, L. Shaw</i>	
Evaluating Ocean-bottom Seismic Acquisition in the North Sea - A Phased Survey Design Case Study	4065
<i>M. Branston, R. Campbell, M. Rowlands, B. Duquet, E. Palmer</i>	
Surface-Consistent Processing of a Full-azimuth Dataset - The Challenges and Solutions	4070
<i>G. Poulain, K. Garceran, M. Grimshaw, D. Le Meur, E. Murray, M. Kowalczyk-Kedzierska, S. Cooper, A. Ourabah</i>	
Comparison of Centered and Traditional Offset Vector Tiling for a Wide Azimuthal Land 3D Survey	4075
<i>J.H. Yu, R. Wojslaw</i>	

WIDE-AZIMUTH IMAGING – CASE HISTORIES

Acquisition and Processing Advances for Subsalt Imaging	4080
<i>S. Kapoor, D. Vigh, N. Moldoveanu</i>	
Deep Water OBN - Exploiting the Data Processing Possibilities	4085
<i>P. Kristiansen, A. Ogunsakin, M. Esotu, B. Hootman, O. Zdraveva, E. Quadt</i>	
Improved Imaging of the Albacora Field through Integration of Up-Going and Down-Going OBC Data	4090
<i>T. Krishnasamy, O.J. Birkeland, D. Mondini, T.M.G. Santiago, C. Guerra, R. Lima</i>	
Velocity Model Building for Full Azimuth Data Around Salt Diapir Bodies - Lessons Learnt from the Culzean HDOBC Survey	4095
<i>A. Merry, E. Sturup-Toft, J. Sinton</i>	

FWI – ACQUISITION MATTERS

Applications of Random Dynamic Shot Decimation in Full Waveform Inversion	4100
<i>S.F. Reker, M.J. Huiskes, R.E. Plessix</i>	
Time-lapse Full Waveform Inversion and Uncertainty Analysis with Different Survey Geometries	4105
<i>D. Yang, A.E. Malcolm, M.C. Fehler</i>	
Waveform Tomography of a 2D Land Data Set Acquired along a Crooked Line with Rough Topography	4110
<i>R. Kamei, T. Miyoshi, R.G. Pratt, M. Takanashi, S. Masaya</i>	
Land Full Waveform Inversion for Dispersed Source Arrays	4115
<i>Y. Kim, C. Tsingas</i>	

FWI – BEYOND SINGLE-PARAMETER INVERSION

Reconciling Seismic AVO and Precritical Reflection FWI – Issues in Multiparameter Gradient-based Updating	4120
<i>K.A. Innanen</i>	
Combined Seismic Waveform Inversion and Geoelectrical Monitoring for CO2 Storage Using a Synthetic Field Site	4125
<i>D. Köhn, S.A. al Hagrey, K. Benisch, W. Rabbel, S. Bauer</i>	
Elastic 2D Full Waveform Inversion of Ultra-long Offset Marine Seismic Streamer Data from Sumatra Forearc Basin	4130
<i>G. Huot, S. Singh</i>	
Non-physical Water Density as a Proxy to Improve Data Fit during Acoustic FWI	4135
<i>A. Silverton, M. Warner, A. Umpleby, J. Morgan, K. Irabor</i>	

EXPLORATION AND FIELDS – CASE HISTORIES

Getting Systematic - A 15 Year Journey in Seismic Operations	4140
<i>T.R. Seaborne, N. Cave, D. Ellis, R. Wye</i>	
AB Gas Fields - From Drilling Hazard to Commercial Development	4145
<i>A.E. Campbell, K. Borowski, M.M.H. Hamers</i>	
West Delta Deep Marine Hydrocarbon Maturation	4150
<i>H. Hasan, T. Cheret, A. El Amir, G. Badalini, J. Snijder</i>	
Prospect Validation Using Geological Expression in an Existing Gas Discovery, Offshore Mozambique	4155
<i>N. Cooke, P. Szaftan, R.M. Grunwald, L. Schuler</i>	
Bright, Fast and Hard Between the Bumps - The Opening of a New Stratigraphic Play Offshore Cameroon	4160
<i>K. MacAllister, S. Tamfu, P. Nguema</i>	
Integrated Basin-scale Thermal Modeling	4165
<i>K. Hokstad, R. Kyrkjebø, K. Duffaut, C. Fichler, Z. Alasonati-Tasarova, T. Wiik, A.J. Carter, E.Ø. Dischler, Ø. Kjosnes</i>	
The Application of Chemostratigraphy and Palynostratigraphy to the Carboniferous within Well Siciny-2, Poland	4170
<i>D. Riley, D. McLean, L. Hubert, P. Zwoliński, R. Klischies, T. Pearce</i>	
A New Integrated Approach to the Subdivision of the Rotliegend and Upper Carboniferous, Offshore Netherlands and Germany	4175
<i>F.M. Cram, T. Morgan, T.J. Pearce, J.H. Martin</i>	

DEDICATED – HPC FOR GEOSCIENCE APPLICATIONS

High-performance Computing in Thermochronological Modeling	4180
<i>K.V. Voronin, Y.M. Laevsky, N.Y. Matushkin, A.E. Vernikovskaya, V.A. Vernikovskiy, O.P. Polyansky</i>	
Multicore Optimizations for Elastic Reverse Time Migration	4185
<i>R.M.S. Mendes, B.K. Kaelin</i>	
Seismic Imaging Software Design for Accelerators	4190
<i>L. Ferraro, S. Orlandini, C. Calonaci, N. Bienati</i>	
Reverse Time Migration with Manycore Coprocessors	4195
<i>T. Teixeira, P. Souza, L. Borges, A. Neto, T. Philippe, C. Andreolli</i>	
Time and Frequency-domain FWI Implementations Based on Time Solver - Analysis of Computational Complexities	4200
<i>R. Brossier, B. Pajot, L. Combe, S. Operto, L. Métivier, J. Virieux</i>	
A Review of Recent Forward Problem Developments Used for Frequency-domain FWI	4205
<i>B. Pajot, Y. Li, V. Berthoumieux, C. Weisbecker, R. Brossier, L. Métivier, P. Thierry, S. Operto, J. Virieux</i>	
Accelerating an Iterative Helmholtz Solver with FPGAs	4210
<i>A. Petrenko, T. van Leeuwen, D. Oriato, S. Tilbury, F.J. Herrmann</i>	
A Novel Nonlinear Solver for Geophysical Inversions	4215
<i>M. De Stefano, F. Golfré Andreasi, A. Secchi</i>	

4D SEISMIC IN RESERVOIR SIMULATION – CLOSING THE LOOP

Updating the Reservoir Model Using Engineering-consistent 4D Seismic Inversion	4220
<i>S. Tian, C. MacBeth, A. Shams</i>	
Utilization of Time-lapse Seismic for Reservoir Model Conditioning	4225
<i>M. Alerini, M. Ayzenberg, T. Ek, T. Feng, L. Hustoft, E. Lie, S. Liu, N. Skjei, J.A. Skjervheim</i>	
Improvement of Pressure and Saturation Estimations from 4D Seismic Supported by Flow Simulation Data	4230
<i>G.G. Correia, A. Davolio, D.J. Schiozer</i>	
Simulation Model Updating with Multiple 4D Seismic in a Fault-compartmentalized Norwegian Sea Field	4235
<i>Z. Yin, C. MacBeth</i>	
Quantitative 4D Analysis Using Business Analytics Techniques	4240
<i>M. Thompson, M. Houbiers, J. McConnell, D.H.B. Irving</i>	
Time-lapse Seismic Reservoir Characterization Used for Reservoir Model Update of a Mature Chalk Field - The South Arne Ca	4245
<i>O.V. Vejbæk, M.K. Rosengreen, V. Volkov, R. Lamb, A.F. Jakobsen, H.J. Hansen</i>	

Quantification of Residual Oil Saturation Using 4D Seismic Data	4250
<i>E. Alvarez, C. MacBeth</i>	
Saturation and Pressure Inversion - From 4D Seismic to Reservoir Model Updating	4255
<i>M. Ayzenberg, S. Liu</i>	

TOMOGRAPHY - THEORY

Recent Advances in Ray-based Tomography	4260
<i>G. Lambare, P. Guillaume, J.P. Montel</i>	
Local Angle Gathers - Optimal Data for Reflection Traveltime Tomography in Geological Areas with Complex Wave Phenomena	4265
<i>Z. Koren</i>	
Efficient Beam Velocity Model Building with Tomography Designed to Accept 3d Residuals Aligning Depth Offset Gathers	4270
<i>J.W.C. Sherwood, K. Sherwood, H. Tieman, R. Mager, C. Zhou</i>	
Regularized Tomographic Inversion with Geological Constraints	4275
<i>V. Lipari, D. Urbano, E. Spadavecchia, J. Panizzardi</i>	
High-resolution Tomography Using Offset-dependent Picking and Inversion Conditioned by Image-guided Interpolation	4280
<i>G. Hilburn, Y. He, Z. Yan, F. Sherrill</i>	
Comparison of Shot-based Image-domain Tomography Approaches - DSO, Penalized Image Local-correlations, and Image-warping	4285
<i>F. Perrone, P. Sava</i>	
Robust Velocity Estimation by Joint Migration Inversion	4290
<i>X.R. Staal, D.J. Verschuur, A.J. Berkhout</i>	
Multiparameter Elastic Imaging Improved by Preconditioning with an Incomplete Inverse Hessian Approximation	4295
<i>D.V. Anikiev, B.M. Kashtan, W.A. Mulder</i>	

LEAST-SQUARES MIGRATION AND QUASI-P - THEORY

Correlative Least-Squares Reverse Time Migration and Its Applications	4300
<i>Y. Zhang, L. Duan, Y. Xie</i>	

VOLUME 6

Linearized Least-square Imaging of Internally Scattered Data	4305
<i>A. Aldawood, I. Hoteit, G. Turkiyyah, M. Zuberi, T. Alkhalifah</i>	
Efficient Amplitude Encoded Least Square RTM Using Cosine Basis	4310
<i>J.T. Hu, H.Z. Wang</i>	
Least-squares Reverse-time Migration with Statistical Sampling	4315
<i>W. Dai, K. Jiao, D. Coles, R.T. Coates</i>	
Application of Plane-wave Least Square Migration in Fault Block Reservoirs - A Case Study	4320
<i>C. Li, J.P. Huang, Z.C. Li, Q.Y. Li, Y. Yang</i>	
A Comparison of Different Scaling Methods for Least-squares Migration/inversion	4325
<i>W. Pan, K. Innanen, G. Margrave</i>	
RTM with Pure Quasi-P Wave Equation	4330
<i>B. Tang, S. Xu, H. Zhou</i>	
Efficient and Accurate Algorithm for Quasi-P Wave Propagation	4335
<i>S. Xu, H. Zhou</i>	

FLUID, FLOW AND LITHOFACIES – CHARACTERIZATION ON CORE AND LOGGING DATA

The Impact of Stylolites on Fluid Flow and Rheology of Porous Carbonates	4340
<i>P. Baud, M.J. Heap, T. Reuschlé, P.G. Meredith</i>	
Combination of Rock Formation Properties Derived from Lab, Log and Seismic Measurements Scale	4345
<i>K. Wawrzyniak-Guz, J. Jarzyna</i>	
Electrical Anisotropy Analysis by a Modified Thomas-Stieber Model	4350
<i>Z. Hossain, P. Newton, M. Ellis</i>	
Electrofacies Based on Piecewise Log Trends	4355
<i>R. Ramberger, C. Steiner-Luckabauer, C. Cubitt</i>	
Identification of Lithologies with Firefly and Affinity Propagation Algorithm	4360
<i>N.S. Caldas, C.E. Guerra, A. Andrade</i>	
A New Approach for Water Entry Point Identification in Small Tubulars	4365
<i>A. Leone, G. Galli, S. Cantini</i>	
Multiscale Characterization of the Porous System of Carbonate Rocks by High Resolution X-Ray Tomography	4370
<i>I.F. Mantovani, A.C. Moreira, C.P. Fernandes</i>	

Hydrofracture Mapping and Monitoring with Borehole Electromagnetic (EM) Methods	4375
<i>M. Wilt, L. Heagy, J. Chen</i>	

FRACTURE IDENTIFICATION FROM SEISMIC ANISOTROPY

Analysis of Wide-Azimuth Angle Gathers for Fracture-induced Anisotropy	4380
<i>S. Hou, W. Wu, N.X. Dai, X.Y. Li</i>	
The Study of Influence Factors of the Transmission Coefficient Anisotropy	4385
<i>P.D. Shi, S.Y. Yuan, Y.Y. Wang, F.F. Yuan, Y. Liu, S.X. Wang</i>	
A New Non-linear Method for Thomsen Anisotropic Parameters Inversion for Fracture Media	4390
<i>Z.D. Sun, P. Yang, J. Tian, H.J. Yang, Z.Z. Cai</i>	
Integrated Fracture Detection Based on Full-azimuth Anisotropic Migration - A Case Study of Ha7 Area, Tarim Basin	4395
<i>S.Z. Sun, C.J. Li, Z.M. Wang, L.J. Zhang, D.M. Zhen, Y.G. Wang, W.K. Yang, R. Rong</i>	
Azimuthal Anisotropy Analysis of Multi-attributes and Fracture Prediction	4400
<i>H.Q. Wang, W.Y. Yang, C.H. Xie, D.B. Zheng, R.H. Wang</i>	
Prediction Method and Application Examples of Pre-stack Full-azimuth Fracture	4405
<i>C.L. Jiang, X.Q. Li Co., X.M. Zhang, Q.F. Zhang, E.L. Wang, H.Q. Wang</i>	
A Case Study of Fracture Prediction and Its Fluid Identification for Complex Carbonate Reservoir	4410
<i>N. Dong, L. Peng, S.Z. Sun, Y. Zhang, J. Wang, Q. Zhang, L. Yu, T. Du</i>	
Fracture Parameters Inversion Based on Azimuth Anisotropic Elastic Impedance	4415
<i>D.X. Yin, Y.Y. Zhang, Z.D. Sun, J.F. Han, L.J. Zhang, D.M. Zheng, H.Y. Yue</i>	

SEISMIC MODELLING II

Elastic One-Return Boundary Element Method and Hybrid Elastic Thin-Slab Propagator	4420
<i>R.S. Wu, Z. Ge</i>	
Application of Matrix Square Root and Its Inverse to Downward Wavefield Extrapolation	4425
<i>P. Zheglova, F.J. Herrmann</i>	
Numerical Acoustic-elastic Coupling and Curved Boundaries for RTM	4430
<i>L. Neseemann</i>	
Attenuation Anisotropy in Fractured Media	4435
<i>Y. Rao, X.H. Chen, J.Y. Li, W. Song, Y.H. Wang</i>	
Model Reduction Approaches for Solution of Wave Equations for Multiple Frequencies	4440
<i>M.Y. Zaslavsky, R.F. Remis, V.L. Druskin</i>	
A Novel Scheme of DG Method for the Anisotropic Elastic Wave Equation with Applications in FWI on Unstructured Meshes	4445
<i>R. Ye, M.V. de Hoop</i>	
Combining Discontinuous Galerkin with Finite Differences to Simulate Seismic Waves in Presence of Free-surface Topograph	4450
<i>V.V. Lisitsa, V. Tcheverda, A. Bakulin, V. Ettienne</i>	
Efficient 3D Finite Element CSEM Modeling with Unstructured Tetrahedral Meshes Using a Parallel Direct Solver	4455
<i>A.R. Sena, D.X. Colombo, E. Sandoval Curiel, E.S. Um, J. Harris</i>	
Modeling Wave Propagation of Microseismic Events in Anisotropic Media	4460
<i>A. Oelke, O.S. Krueger, S.A. Shapiro</i>	
Numerical Modeling of Direct Responses from Productive Reservoirs with Vertical Fluid-saturated Meso-fractures	4465
<i>I.E. Kvasov, V.B. Leviant JSC, I.B. Petrov</i>	
Seismic Virtual Reality - Finite Difference Modelling of a Giant Oil Field in the Caspian	4470
<i>A.G. Crosby, C. Williams-Nagassar, T.J. Sears</i>	
Estimating Seismic Uncertainty in Model Space	4475
<i>P.K. Elapavuluri, A.J. Girard</i>	
Seismic Ray Tracing in Anisotropic Media - A Modified Newton Algorithm for Solving Nonlinear Systems	4480
<i>Y. Wang</i>	
An Efficient Eikonal Solver for Tilted Transversely Isotropic and Tilted Orthorhombic Media	4485
<i>U. Waheed, C. Yarman, G. Flagg</i>	
A Phase-velocity Based Ray Tracing System for Anisotropic Media	4490
<i>B. Jiang, H.Z. Wang, S.Y. Liu</i>	
Approximate P-wave Ray Tracing and Dynamic Ray Tracing in Weakly Orthorhombic Media of Varying Symmetry Orientation	4495
<i>N. Masmoudi, I. Psencik</i>	

SEISMIC INVERSION – IMPACT, UNCERTAINTY AND USAGE

Downscaling Algorithms for Continuous Variables - Using Seismic Inversion Results in Fine Scale Static Models	4500
<i>P. Gelderblom</i>	

AdaBoost-based Multi-attribute Classification Technology and Its Application	4506
<i>W. Xiong, Z.H. Wan, X.L. Bai, H.G. Xing, H.G. Zuo, K.H. Zhu, S.G. Yang</i>	
Qualifying Seismic as a Reliable Technology for Conditioning Geomodels - A Case Study from the Hasdrubal Field, Tunisia	4511
<i>A.J.S. Wilson, R. Chaabouni, S. Ghomari, C. Chiboub, N. Dkhaili</i>	
Uncertainty in Seismic Inversion - Effect of Uncertainty in Wavelets and a Priori Model	4516
<i>M.S. Shahraeeni, P.T. Thore</i>	
Application of Image-guided Interpolation to Build Low Frequency Background Model Prior to Inversion	4521
<i>J. Douma, E. Zabihi Naeini</i>	
Seismic Inversion for Petrophysical-properties Based on Bayesian Classification	4526
<i>H.F. Hu, L. Yang, K.F. Zhang, J.N. Bi, Y. Zhang, F.F. He</i>	
Automated Seismic Facies for Data Integration - An Example from the Fort Worth (Texas, USA)	4531
<i>I.D. Marroquin</i>	
Nearest Neighbor Based Seismic Attribute Selection for Effective Porosity Prediction	4536
<i>A. Ashtari Talkhestani</i>	

RESERVOIR CHARACTERIZATION – UNCONVENTIONAL METHODS FOR UNCONVENTIONAL RESERVOIRS

The Anisotropic Characteristics of Mesoscale Fractures and Applications in Wide Azimuth 3D P-wave Seismic Data	4541
<i>Y. Wang, S. Chen, X.Y. Li</i>	
Imaging and Characterization of a Shale Reservoir in Onshore Poland Using Full-azimuth Seismic Depth Imaging	4546
<i>M.W. Podolak, H. Kowalski, P. Godlewski, W. Kobusinski, J. Makarewicz, A. Nowicka, Z. Mikolajewski, D. Chase, R. Dafni, A. Canning, Z. Koren</i>	
Seismic Reservoir Characterization of Unconventional Gas Shales	4551
<i>M. Jiang, K. Spikes</i>	
Estimation of Volumetric Fraction of Coal Seams in a Thick Layer Using Anisotropy Parameters - Feasibility Study	4556
<i>R. Pevzner, A. Bona, M. Lebedev</i>	
3D Seismic Survey for a Petrothermal Research Project in Crystalline Rocks of Saxony	4561
<i>E. Lueschen, H. von Hartmann, R. Thomas, R. Schulz</i>	
Application of Quantitative Description Method of Carbonate Cave Reservoir Based on Wave Equation Forward Modelling	4566
<i>Y. Zhang, Z.R. Zhang, Z.F. Rui</i>	
Lithological Estimation with Vp/Vs Ratio from 3D3C Seismic in Unconsolidated Sands at Orinoco Oil Belt, Venezuela	4571
<i>A. Pérez Gil, G. Perez Flores, A. Ovalles, I. Villar</i>	
Wide Azimuth Data - How To Maximize Their Value for a Tight Gas Play, Onshore Oman	4576
<i>M. Scholten-Vissinga</i>	

MULTI-PARAMETER FWI

A Multi-parameter Full Waveform Inversion Strategy in Acoustic Media	4581
<i>J.Z. Yang, Y.Z. Liu, L.G. Dong</i>	
Acoustic Pseudo-density Full Waveform Inversion in the Presence of Hard Thin Beds	4586
<i>D. Borisov, A. Stopin, R.E. Plessix</i>	
Monitoring of Elastic and Petrophysical Material Parameters of a Synthetic CAES Storage Site by 2D Waveform Inversion	4591
<i>D. Köhn, S.A. al Hagrey, W. Rabbel</i>	
Application of Elastic 2D Waveform Inversion to a Near Surface SH-wave Dataset	4596
<i>E. Dokter, D. Köhn, D. Wilken, W. Rabbel</i>	
Numerical Experiments of Full Waveform Inversion on a Typical Pre-salt Model - Part 2 - Elastic Effects	4601
<i>B. Pereira Dias, A.A.V.B. Souza, A. Bulcão, D.M. Soares Filho, F.F. Farias, F.P. Loureiro, L.A. Santos</i>	
2-D Wavefield Inversion for High-resolution Elastic Property Estimation	4606
<i>G. Rizzuti, A. Gisolf</i>	
An Anisotropic Conjugate Gradient Acoustic Waveform Inversion in TTI Media	4611
<i>B.C. Shao, J.P. Huang, Q.Y. Li, Z.C. Li</i>	
A New Parameterization for 2-D Elastic VTI Media	4616
<i>W.K. Kim, D.J. Min, S.W. Kim</i>	

LEAST-SQUARES MIGRATION AND BEAM - THEORY

Multi-source Least-squares Reverse-time Migration in the Presence of Topography on Body-fitted Grids	4621
<i>Q.Y. Li, J.P. Huang, Z.C. Li, N. Li, K. Tian</i>	
Acoustic Reverse-time Migration with Least Squares Staggered-grid Finite-difference Operators	4626
<i>H. Yan, L. Yang, H. Liu</i>	

Filter-based Least Squares Wave Equation Shot Profile Migration	4631
<i>N. Kazemi, M.D. Sacchi</i>	
Subsalt Imaging Based on the Beam Propagation through Irregular Interfaces.....	4636
<i>M. Protasov</i>	
An Accurate Acoustic Gaussian Beam Migration Method without Slant Stack for Complex Irregular Surface	4641
<i>M.L. Yuan, J.P. Huang, Z.C. Li, X.Y. Duan</i>	
Improving the Quality of Angle Gathers from Pseudo-acoustic RTM in TTI Media Using Beam Forming	4646
<i>Y. Zhou, L. Zhao, H.Z. Wang</i>	
Interface Fresnel Zone for Reflected Waves from a Curved Interface in Anisotropic Media	4651
<i>N. Favretto-Cristini, B. Ursin, P. Cristini</i>	
An Efficient Amplitude Encoding Scheme for Reverse Time Migration	4656
<i>J.T. Hu, Y. Shao, M.X. Wang, H.Z. Wang, A. Osen, H.B. Zhou</i>	

BROAD BAND ACQUISITION AND PROCESSING

Studying a Spatially Variant Deghost Technique for Conventional Streamer Data	4661
<i>J.H. Yu, M. Smith, N. Shah</i>	
Improved Pre-Carbonate Imaging with Broadband Data – Offshore Malaysia.....	4666
<i>R. Alai, A.A. Muhamad, A. Sazykin, P. Adhikary, G. Nyein, N.N.H. Che Soh, S.N. Parsuram</i>	
Broadband Processing of Slant Streamer Data from Offshore Tunisia.....	4671
<i>H. Masoomzadeh, A. Hardwick</i>	
Improved Reservoir Characterisation by Multisensor Towed Streamer Seismic Data at the Mariner Field	4676
<i>S. Ostmo, P. McFadzean, S. Silcock, C. Spjuth, E. Sundvor, L.P. Letki, D. Clark</i>	

WIDE-ANGLE / MULTI-AZIMUTH ACQUISITION AND PROCESSING

A Case Study of Orthogonal Wide Azimuth Surveys - Acquisition and Imaging in OVT Domain.....	4681
<i>W.S. Duan, G.X. Peng, F. Li, L.Z. Huang</i>	
Extracting New Value from Legacy OBC Data by a Holistic Use of Innovative Depth Imaging Technologies	4686
<i>L. Mulisheva, O. Zdraveva, K. Lyons, J. Gardner</i>	
Multi-azimuth 3D Model Building and Azimuthally Anisotropic PSDM for Land Data Processing.....	4691
<i>H.J. Zhang, M. Yu, Y. Yang, J.X. Zhao, Y. Fang</i>	
Enhanced Angular Illumination from Separated Wavefield Imaging (SWIM).....	4696
<i>S. Lu, N.D. Whitmore, A.A. Valenciano, N. Chemingui</i>	

SEISMIC ACQUISITION

A Practical Equation for Air Gun Bubble Time Period Including the Effect of Varying Sea Water Temperature.....	4701
<i>M. Landro</i>	
Influence of Mechanical Parameters on Air-gun Signature	4706
<i>Z. Liu, G.F. Li, M.Q. Cao, C.L. Lan, X.M. Zhang, X.G. Lin</i>	
A Simple and Universal Source Array Construction Method.....	4711
<i>J. Norton</i>	
Optimization of Infill-shot Layout Based on Target Illumination Analysis	4716
<i>J.P. Yu, W. Peng, K.H. Li, Z.X. Han, X.G. Liu</i>	
Shear-wave Reflection-seismic Pilot Study at the UNIS CO2 Lab site, Longyearbyen, Svalbard	4721
<i>I. Lecomte, U. Polom, G. Sauvin, B.O. Ruud, H. Christiansen, G. Gilbert</i>	
MEMS-based Accelerometers - The Quest for Low Frequencies and Weak Signals	4726
<i>M. Moreau, J. Lainé, M. Serrut</i>	
The Greeley 3D Seismic Survey - The USA's Largest Urban Survey Leads to Niobrara Horizontal Drilling.....	4731
<i>T.E. Galikeev, J. Wiener, C. Richardson</i>	
A 3-D Seismic Prospecting Integration Solution in a Complex Mountainous Region, Western Qaidam Basin.....	4736
<i>H.X. Ning, Y.G. Wu, D.L. Tang, G.Y. Li, G.S. Li</i>	

EM MODELLING AND IMAGING

Minimizing the Noise Contribution in Vertical Electric Field Measurements	4741
<i>O. Frajford, T. Holten, A.M. El Kaffas, J.M. Borven, S.L. Helwig</i>	
Evaluation of Conductive 3-D Ore Bodies Parameters Using Tipper Frequency Response Functions.....	4746
<i>E. Ermolin, O. Ingerov, I. Ingerov</i>	
3-D Magnetotelluric Inversion - Characterization of a Geothermal System (Tenerife Island, Spain).....	4751
<i>P. Piña, J. Ledo, P. Queralt, A. Marcuello</i>	
Seismic Guided EM Inversion in Complex Geology - Application to the Bressay and Bentley heavy Oil Discoveries, North Sea	4756
<i>Z. Du, S. Hosseinzadeh</i>	

NON-CONVENTIONAL METHODS

Mapping the Fracture System of a Landslide by Pressure Probe Method	4761
<i>S. Szalai, K. Szokoli, Á. Tóth, M. Metwaly</i>	
Magnetic Studies Associated with Hydrocarbon Fields in the Ukrainian Part of Carpathian Foredeep	4766
<i>O. Menshov, R. Kuderavets, I. Chobotok, V. Tymoschuk</i>	
Integrated Approach for Drilling Location Using Crooked Line Seismic, Gravity, Magnetic and Geochemical Data	4771
<i>G.K. Ghosh, R. Dasgupta</i>	
Calculating the Velocity of Strata in Northern South China Sea Using the Non-first Arrival Refractions	4776
<i>B. Zhang, G. Cheng, H. Song, J. Chen</i>	

TIME-LAPSE SEISMIC PROCESSING

Pre-stack Time-lapse Seismic Attributes Analysis in Tau-P Domain	4781
<i>Y.X. He, D.A. Angus</i>	
Analysis of Differential Waveform of Time-lapse Seismic Data in Deep Water of West Africa	4786
<i>M. Li, Z. Liu, M.Z. Liu, Y.F. Zhang</i>	
Sub-sample Time Shift and Displacement Measurement by Phase-correlation in Time-lapse Seismic	4791
<i>G. Tomar, S. Singh, J.P. Montagner</i>	
Retrieval of 4D Perturbations by Application of Warping in Depth Imaging Contexts	4796
<i>F.A. Audebert, C.A. Agut</i>	

DIFFRACTION MODELLING AND IMAGING

Imaging of Fracture Zones by Weighted Summation of Multi-component Data and Image Spectrum Analysis	4801
<i>M. Protasov, G.V. Reshetova, V.A. Tcheverda</i>	
The Feasible Near-front Wavefield Below Salt Overhang in Terms of Cascade Diffraction	4806
<i>A.A. Ayzenberg, N. Zyatkov, A. Stovas, A.M. Aizenberg</i>	
New Concepts of the Transmission-propagation Operator Theory in Seismic Diffraction Modeling and Interpretation	4811
<i>A.M. Aizenberg, N.Y. Zyatkov, A.A. Ayzenberg, E.Z. Rakshaeva</i>	
The Wave Scattered by Gabor-perturbation in Acoustic Media and Its Application	4816
<i>H. Li, H. Wang</i>	

REMOTE SENSING

Supporting Oil and Gas Exploration with Multi-source and Multi-scale Remote Sensing for Geological Mapping	4821
<i>M. Hall</i>	
Landsat ETM+ Digital Image Processing Techniques for Lithological Enhancement, Qena – Safaga Road, Eastern Desret, Egypt	4826
<i>A. Khalifa</i>	
Frequency-resonance Method of Remote Sensing Data Processing - Approbation on Hydrocarbon Field of Barents Sea Offshore	4831
<i>S.P. Levashov, M.A. Yakymchuk, I.N. Korchagin, D.N. Bozhezha</i>	
Real Time Flood Inundation Modelling for Midnapore-Kharagpur Development Authority (MKDA) Planing Region	4836
<i>A. Chakrabarty</i>	

GEOMECHANICS AND FLOW MODELLING

Fault Stability Assessment of CO2CRC Otway Project, Australia – A Geomechanical Approach	4841
<i>C.M. Aruffo, A. Henk</i>	
Stress Field and Fracture Propagation Induced by Fluid Pressure Changes	4846
<i>K. Okubo, H. Mikada, T. Goto, J. Takekawa</i>	
Thermodynamically Consistent Model of Multiphase Filtration Through the Deformed Porous Medium	4851
<i>Y.V. Perepechko, E.I. Romenski, G.V. Reshetova</i>	
Elastic Deformation Behaviour of Palaeogene Clay	4856
<i>A. Awadalkarim, N.N. Foged, I.L. Fabricius</i>	

SHALE AND TIGHT RESERVOIRS

Tithonian Basal Makhul Shale - A Promising Shale Resource Play in Kuwait	4861
<i>R. Husain, A. Al-Khamis, A. Prakash, F. Hussain, P. Singh, N. Al-Ammar, A. Al-Fares</i>	
Prospectivity of the Makhul Formation as a Potential Unconventional Target for ShaleGas /Shale Oil Exploration in Kuwait	4866
<i>P.K. Mishra</i>	

Rudov Beds as Main Object of Shale Gas Prospecting in the Lower Carboniferous of the Dnieper-donets Basin	4871
<i>V. Makogon, T. Popova, G. Goncharov, O. Lukin, R.F. Sachsenhofer</i>	
Research and Application on Sweet Spot Discrimination Technology in North American Shale	4876
<i>C.C. Liu, Y.H. Zhang, J. Yu, R.B. Qin</i>	
Elastic Constants Calculation Method and Propagation Properties for Cracked Shale Media	4881
<i>J.J. Zhou, D.L. Wang, F. Feng</i>	
A New Shale Gas Evaluation Method Using Isotropic Approximation Based on Modified Xu-Payne Model	4886
<i>Y. Sun, S.Z. Sun, Z. Liu, N. Dong, J. Liu, H. Xia, Z. Du</i>	
Applicability of Theoretical Formula on Anisotropy of Shale - Based on Experimental Research and Error Analysis	4891
<i>J.Y. Xie, J.X. Wei, B.R. Di, X.Y. Luan</i>	
Avo Response Variation of Tight Gas Sand in Two Saturation Patterns	4896
<i>W.P. Si, B.R. Di, J.X. Wei</i>	

FLUID, FLOW AND LITHOFACIES – CHARACTERIZATION ON CORE AND LOGGING DATA

Thermal Conductivity Log out of Correlations for Carbonates from Austria	4901
<i>N. Gegenhuber, M. Schreilechner</i>	
3D Pore Structure Investigation of Albian Carbonates from Campos Basin	4906
<i>N.L. Archilha, R.M. Missagia, C. Hollis, M.A.R. Ceia, I.A. Lima Neto, D. Eastwood</i>	
Determining Interpretation Parameters Using 2D Magnetic Resonance Measurements	4911
<i>S. Jacobsen, S. Crary, C. Cao Minh, P.M. Singer, L. Zielinski</i>	
Novel Petrophysical Approach for Water Saturation Estimation	4916
<i>H.N. Zhang, T.Z. Tang, T.Y. Liu, P. Sun, J. Yan, Y.F. Fan</i>	
Dielectric Logging Application in Complicated Salinity Water Reservoirs	4921
<i>H.Q. Liu, Y.M. Deng, J. Yong, J.J. Liu, J. Yan</i>	
New Computational Model for Induction Logging	4926
<i>A.Q. Howard</i>	
Robust Log Sharpening with Unknown Tool Response Function	4931
<i>G.A. Bordakov, M.V. Kliegl, J.C. Goswami</i>	
Understanding of Brittleness and the Relative Brittleness Index Construction	4936
<i>Z.S. Liu, S.Z. Sun, N. Dong, Y.Y. Sun, Z.J. Jin, L.W. Yu, J.C. Li</i>	

INNOVATIVE TECHNOLOGIES

A Simple and Fast Algorithm to Estimate Effective Anisotropy Parameters	4942
<i>S. Prajapati, D. Ghosh</i>	
Locating the Orebodies Using Regional 3D Seismic Reflection Approach in the Gawler Craton, South Australia	4947
<i>O. Okan, A. Kopic, P. Williams</i>	
Special Core Analysis Designed to Minimize Formation Damage Associated with Vertical/Horizontal Drilling Applications	4952
<i>M. Panamukkath, R. Sharma</i>	
Heavy Oil Transportation - Can It Be Made Easier by Magnetism?	4957
<i>D. Pandey, A.K. Singh, A. Sarkar</i>	
Parallelization of KT3D Application of GSLIB Library Using Coprocessor Intel Xeon Phi with OpenMP	4962
<i>A.A. Ferreira, F.F.A. Ponte, L.E.S. Varella</i>	
An Approach of Full Waveform Inversion on GPU Clusters and Its Application on Land Datasets	4967
<i>M. Zhang, Z.Q. Sui, H.Z. Wang, H.R. Ren, Y.G. Wang, X.B. Meng</i>	
Seismic Reflectivity Inversion Using the GPU-accelerated Basis Pursuit Method	4972
<i>R. Wang, Y. Wang</i>	

MICROSEISMIC

Integrated Interpretation of Microseismic with Surface Seismic Attributes from Hoadley, Western Canada	4977
<i>A. Rafiq, D.W. Eaton</i>	
Analysis of Hydraulic Fracturing-induced Microseismic Event Location Using S-wave Polarization	4982
<i>J.M. Reyes-Montes, X.P. Zhao, F. Chu, R.P. Young</i>	
Reprocessing and Characterization of Long-duration Tremor Signals from a Hydraulic-fracture Treatment in Western Canada	4987
<i>E.C. Caffagni, D.W.E. Eaton</i>	
Measuring Shear-wave Splitting Using Seismic Anisotropy	4992
<i>B.M. Yousef, D.A. Angus, M.W. Hildyard, J.P. Verdon, M. Perry</i>	
3D Relocation Errors of Microseismic Events by Surface and Borehole Receivers for Shale Gas Stimulation	4997
<i>H. Alshafy, A.L. Vesnaver, M. Jervis, H. Kuleli</i>	
Localization of Seismic Events by Diffraction Stacking - The Role of Imaging Conditions	5002
<i>O. Zhebel, D. Gajewski, C. Vanelle</i>	

Microseismic Imaging using Time-reversed Wavefield Extrapolation - Synthetic Modeling and Application to a Real Data	5007
<i>A. Hendriyana, M.S. Jaya, K. Bauer, Y. Kusnadi Ltd.</i>	
The Analysis of Equivalent Velocity in Surface Array Micro-seismic Monitoring	5012
<i>R. Diao, X.T. Hu, Q.H. Cui, X.M. Shang, Y.J. Rui</i>	

CARBONATE ROCK PHYSICS AND DIGITAL ROCKS

A Laboratory Study of Elastic and Anelastic Properties of Savonnières Limestone	5017
<i>V. Mikhailitsevitch, M. Lebedev, B. Gurevich</i>	
Relationship between the Consolidation Parameter and Aspect Ratio in Microporous Carbonate Rocks	5022
<i>M.A.R. Ceia, R.M. Missagia, I. Lima Neto, N.L. Archilha</i>	
Extracting Pore Structure Parameter of Carbonate Rock from Well Logging Data	5027
<i>H. Cai</i>	
Microporosity Prediction Using Velocity-porosity Relationship, DIA and DEM theory for Carbonate Pore System Evaluation	5032
<i>I.A. Lima Neto, R.M. Missagia, M.A. Ceia, N.L. Archilha</i>	
Evaluation of Digital Rock Physics for Routine and Special Core Analysis	5037
<i>N. Abbasi</i>	
Studies on Dispersion of Reservoir Rocks Using Multi-band Direct Laboratory Measurement Methodology With μ-CT Scanning	5042
<i>Z.J. Zhao, W.S. Wang, L. Li, W. Wei, Y. Yin</i>	
Permeability Dependence of Streaming Potential Coupling Coefficients in Porous Media	5047
<i>D.T. Luong, R. Sprik</i>	
The Rock Physics Velocity Prediction and Rock Physics Template Construction in Sand Reservoir	5052
<i>H. Lu, X.H. Zhou, X.Z. Liu, X.Y. She, Q.B. Wang, B. Yang, L.X. Tian, J.P. Li, C.G. Xu</i>	

QUANTITATIVE RESERVOIR CHARACTERIZATION

Seismic Quantitative Interpretation of a Gas Bearing Reservoir - From Rock Physics to Volumetric	5057
<i>P. Alvarez, F. Bolivar, W. Marin, M. Di Lucas, T. Salinas</i>	
The Application of Sand Sculpting Technology in Triassic Stratum of Lunnan Oilfield 206 Well Field	5062
<i>C. He, J. Tang, H.Z. Zhang, Y.J. Niu</i>	
Integration of Qualitative and Quantitative Seismic Methods by the Example of One of the Deposits in Western Siberia	5067
<i>D.N. Myasoedov</i>	
An Improved Frequency-dependent AVO Inversion Method and Its Application for Fluid Detection	5072
<i>S.Z. Sun, H. Yue, L. Hu, Y. Zhang, J. Wang, L. Peng, T. Du, T. Peng</i>	

SEISMIC ATTRIBUTE AND INTERPRETATION

The Estimation of the Pore Volume of Carbonate Reservoir by Seismic Physical Simulation	5077
<i>Q. Li, B.R. Di, J.X. Wei, X.Y. Luan, S. Lu</i>	
Spatial Resolution of the Nonstationary Phase Estimation Method - Ketzin Case Study	5082
<i>M. Gil, R.H. Herrera, M. van der Baan, S. Lüth, C.M. Krawczyk</i>	
Conditioning Structural Models to Seismic Data	5087
<i>G.M. Leahy, W. Yang, A. Bukhgeym</i>	
Using Geophysical Modelling to Support and Forecast a Geologic Scenario - Deep Water Offshore Brazil Case	5092
<i>F. Barbosa da Silva, D. Cardoso Dutra, B. Nabuco Correa</i>	

STUDENT SESSION – SEISMIC DATA ACQUISITION AND PROCESSING

Delineation of Faults by 2D and 3D Common Depth Point Methods in Hydrocarbon Fields of Kazakhstan	5097
<i>Z. Karamergenov</i>	
Automated Determination of Polarity and Amplitude Ratios for Estimation of Fault Plane Solutions	5100
<i>F. Motz</i>	
Estimating Primaries from Passive Seismic Data Using Noise Sources	5103
<i>H. Cheng, D.L. Wang, F. Feng</i>	
Full-waveform Inversion Applying Over/under Towed-streamer Data	5106
<i>H.L. Yang, L.G. Han, Y. Ling</i>	
A Generalized Optimal 17-point Scheme for Frequency-domain Scalar Wave Equation	5109
<i>X.D. Tang, H. Liu</i>	
Attenuation of the Internal Multiples in OBC Data by Interferometry Redatuming	5112
<i>H. Cheng, D.L. Wang, F. Feng</i>	
Seismic Random Noise Attenuation via Non-Local Means Filters	5115
<i>S. Langari, A. Gholami</i>	

Constant Q Analysis by Optimized Sparse S-Transform	5118
<i>M Radad, A. Gholami</i>	

STUDENT SESSION – SOURCE AND RESERVOIR GEOLOGY INCLUDING CCS

The Slope-to-basin Succession of the Gran Sasso - An Analogue of Potential Hydrocarbon Reservoirs in the Adriatic - Italy.....	5121
<i>V. Mascolo, G. Rusciadelli, C. Ricci, P. Shiner</i>	
Deeply Buried Sandstones - Diagenesis and Reservoir Quality	5124
<i>J. Nosal, G. Zabek</i>	
Tectonic Evolution of Gas Traps in the North of West Siberia.....	5127
<i>E. Surikova</i>	
Integration of Well logging and Biostratigraphic Analysis in the Delineating of Depositional Models in Baltim Area.....	5130
<i>A.M Nasr El-deen, A.S.A. Abu El-Ata, N.H. El Gendy</i>	
Carbon Dioxide Capture, Utilization and Storage (CCUS).....	5133
<i>A.H Harsh, V.A. Anne</i>	
Maikopian Group - Source Rock Deposits of Azerbaijan.....	5136
<i>K.G. Vahabov</i>	

STUDENT SESSION – RESERVOIR CHARACTERIZATION AND GEOLOGY OF CARBONATE AND FRACTURED RESERVOIRS

Petrophysical Analysis of the Tight Modryn Formation in the Lublin Basin Poland.....	5140
<i>P.I. Krakowska</i>	
Using Multiple Linear Models for Permeability Estimation and Modeling in a Well of Sandstone Reservoir.....	5143
<i>W.J.M. Al-Mudhafer, Y. Gebrai</i>	
The Petrophysical Parameters Analysis of Pirallahi Field of the Absheron Archipelago.....	5146
<i>L. Shikhova, V. Seyidov, T. Mammadov, T. Volkov</i>	
Geochemistry of the Lower Paleozoic Wajid Formation in Saudi Arabia - Implications for Tectonic Setting and Provenance	5149
<i>M. Yassin, O. Abdullatif</i>	
Integrating Markov Chains for Bayesian Estimation of Vertical Facies Sequences through Linear Discriminant Analysis.....	5152
<i>W.J.M. Al-Mudhafer</i>	
Application of Multilayer Feed Forward Neural Network - Porosity Mapping in Gas Hydrate Sediment of K-G Basin, India.....	5155
<i>D.K. Singha, R. Chatterjee, K. Sain</i>	
Mathematical Modeling of the System of Reservoir-well for WI.....	5158
<i>M.A. Bondarenko</i>	
Author Index	