

53rd US Rock Mechanics / Geomechanics Symposium 2019

New York, New York, USA
23-26 June 2019

Volume 1 of 6

ISBN: 978-1-5108-9406-8

Printed from e-media with permission by:

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



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

Copyright© (2019) by the American Rock Mechanics Association
All rights reserved.

Printed with permission by Curran Associates, Inc. (2019)

For permission requests, please contact the American Rock Mechanics Association
at the address below.

American Rock Mechanics Association
Peter Smeallie, Executive Director
600 Woodland Terrace
Alexandria, Virginia 22302-3319

Phone: (703) 683-1808
Fax: (703) 997-6112

info@armarocks.org

Additional copies of this publication are available from:

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

TABLE OF CONTENTS

VOLUME 1

3D DEM Simulation on the Interference of Multiple Hydraulic Fractures in Horizontal Wells	1
<i>Fu, Wei ; Bungler, Andrew P.</i>	
A 3D Grain-Based Model for Simulating Heterogenous Properties of Salt Rock Under Uniaxial Compression Test	8
<i>Li, Huan ; Yang, Chunhe ; Zhang, Haina ; Yang, Jie ; Zhang, Yuhao ; Han, Yue ; Xue, Tianfu ; Ma, Changkun</i>	
3D Modeling and Natural Fractures Characterization in Hassi Guettar Field, Algeria	15
<i>Boualam, Aldjia ; Djezzar, Sofiane ; Rasouli, Vamegh ; Rabiei, Minou</i>	
Accumulation Damage Assessment Method for Rock Mass Based on Vibration Energy Analysis	21
<i>Xue, Y. D. ; Dong, H. X. ; Yang, R. ; Li, Sh. B.</i>	
Acoustic Emission Monitoring of a Laboratory Hydraulic Fracturing Experiment on Montney Shale	32
<i>Jia, S. Q. ; Wong, R. C. K. ; Eaton, D. W.</i>	
Acoustic Emissions During Deformation of Sandstone with Fluids	37
<i>Muqtadir, A. ; Al-Dughaimi, S. ; Ali, A. Z. ; Kandil, M. E. ; Dvorkin, J.</i>	
Advanced Analysis of Damaging Seismic Events in Mines – A Case Study	42
<i>Rebuli, D. B. ; Calixto, F. ; Coca Mazuela, J. A.</i>	
Advanced Formation Testing Using a Wireline-Deployed Formation Testing Tool to Characterize In-Situ Stress Parameters in a Depleted Niagaran Pinnacle Reef Carbonate Reservoir	49
<i>Raziperchikolae, S. ; Kelley, M. ; Moronkeji, D. ; Xu, H. ; Guillermo, B. ; Pardini, R.</i>	
Advanced Test Methods for Investigating the Time-Dependent Behaviors of Rocks	57
<i>Hashiba, K. ; Fukui, K.</i>	
Advances in Hydromechanical Coupling for Complex Hydraulically Fractured Unconventional Reservoirs	64
<i>Cottrell, M. G. ; Hartley, L. J. ; Libby, S.</i>	
Analysis and Evaluation of Fragment Size Distributions in Rock Blasting at the Erdenet Copper Mine	75
<i>Dondov, E. ; Chen, G. ; Dendev, N.</i>	
Analysis of a Large Open Pit Mine in Western Australia Using Finite Element and Limit Equilibrium Methods	85
<i>Bar, N. ; Yacoub, T. E. ; McQuillan, A.</i>	
Analysis of Coupled Hydro-Mechanical Response in Deformable Porous Rock Using DEM	93
<i>Nanda, K. ; Das, A. ; Misra, S.</i>	
Analysis of Drilling-Induced Tensile Fracture Initiation in Porous, Permeable Media Considering Fluid Infiltration	98
<i>Michael, A. ; Gupta, I.</i>	
Analysis of Fracture Initiation and Broaching Resulting from Worst Case Discharge Events	110
<i>Michael, A. ; Gupta, I.</i>	
Analysis of Pressure/Flow Response Data from the EGS Collab Project	120
<i>Ingraham, M. D. ; Knox, H. A. ; Strickland, C. E. ; Vermeul, V. R. ; Burghardt, J. A.</i>	
An Analysis of Stresses and Displacements Around a Fault Due to Longwall Face Advance	126
<i>Carlton, C. G. ; Chugh, Y. P.</i>	
Analysis of the Microstructure Stress Distribution and Deformation Characteristics of Coal via CT 3D Reconstruction Technology	138
<i>Wang, Gang ; Han, Dongyang ; Jiang, Chenghao ; Qin, Xiangjie</i>	
Analysis of the Mobilization of Strength Parameters in Brittle Intact Rock	150
<i>Cabezas, R. E. ; Vallejos, J. A.</i>	
Analysis on Collapse Pressure and Fracture Pressure of a Borehole in Natural Gas Hydrate Formation	158
<i>Tan, T. ; Zhang, H. ; Li, J. ; Wang, H. ; Cai, Z. ; Yu, Q. ; Yang, M. ; Chen, Y. ; Liu, K. ; Deng, Q.</i>	
Analysis on Temperature Effects of Disc Cutters During the Rock-Cutter Interaction	167
<i>Haiqing, Yang ; Bolong, Liu</i>	
Analysis Study of Remote Displacement Monitored During CO₂ Injection into Reservoirs	176
<i>Gao, X. ; Li, H. ; Zheng, L.-N. ; Jin, Y.</i>	
Analytical and Numerical Estimates of Hydraulic Fracture Characteristics Created by a Wellbore Pressure Pulse	186
<i>Chertov, M. A. ; Chaplygin, A. V.</i>	

Anisotropic Permeability Evolution of Pre-Existing Natural Fractures in Cubic Coal Under True-Triaxial Stresses: An Experimental and Modelling Study	193
<i>Liu, Y. B. ; Yin, G. Z. ; Zhang, D. M. ; Li, M. H.</i>	
Anisotropic Strength and Elastic Properties of Poorman Schist at the EGS Collab Experiment 1 Site	199
<i>Condon, K. J. ; Sone, H. ; Wang, H. F.</i>	
The Anisotropy Induced Triaxial Stress State Controls the Failure of Low Porosity Anisotropic Rocks	207
<i>Petruszalek, M. ; Lokajicek, T. ; Svitek, T. ; Jechumtalova, Z. ; Kolar, P. ; Sileny, J.</i>	
Anisotropy of Shear Behaviors in Shale Based on an Open-Box-Style Inclined Shear Test	215
<i>Chen, M. ; Xiu, N. L. ; Xu, Y. ; Zhang, S. C. ; Ma, X. F. ; Zou, Y. S. ; Li, S. H.</i>	
Applicability of Ultrasonic Tomographic Technique for Progressive Damage Evaluation in Prismatic Rock Specimen.....	222
<i>Butt, Awais ; Fragomeni, Cara ; Hedayat, Ahmadreza ; Tudisco, Erika</i>	
Application of a Bingham Viscoplastic Model to Borehole Closure: Comparison Between Two Numerical Approaches.....	230
<i>Xie, Xiyang ; Fjær, Erling ; Detournay, Christine</i>	
Application of Artificial Intelligence to Predict Sonic Wave Transit Time in Unconventional Tight Sandstones.....	236
<i>Muqtadir, Arqam ; Elkatatny, S. M. ; Tariq, Z. ; Mahmoud, M. A. ; Abdulraheem, A.</i>	
Application of Integrated Geology and Geomechanics to Stimulation Optimization Workflow to Maximize Well Potential in a Tight Oil Reservoir, Ordos Basin, Northern Central China	244
<i>Zhang, Kuangsheng ; Tang, Meirong ; Du, Xianfei ; Ma, Bing ; Qiu, Kaibin ; Wang, Lizhi ; Zhuang, Xiangqi ; Wang, Lipeng ; Pan, Yuanwei</i>	
The Application of Micro-Sized Crosslinked Polymer Gel for Water Control to Improve Zonal Isolation in Cement Sheath: An Experimental Investigation.....	260
<i>Abdulfarraj, Murad ; Imqam, Abdulmohsin</i>	
Artificial Neural Network to Predict the Interaction Between Natural and Hydraulic Fracture.....	271
<i>Silveira, B. T. ; Mejia, E. C. ; Roehl, D.</i>	
Assessing Energy Budget of Laboratory Fault Slip Using Quantitative Micro-CT Image Analysis	277
<i>Zhao, Qi ; Glaser, Steven D. ; Tisato, Nicola ; Grasselli, Giovanni</i>	
Assessing the Geomechanical Behaviours of Skarn-Related Hydrothermal Veins in Intact Laboratory Tests.....	283
<i>Clark, M. D. ; Day, J. J. ; Diederichs, M. S.</i>	
Assessment of Existing Design Criteria for Wire-Wrapped Screens in Thermal Wells	294
<i>Montero Pallares, J. D. ; Wang, C. ; Nouri, A. ; Haftani, M. ; Mahmoudi, M. ; Fattahpour, V.</i>	
Assessment of Historic InSAR Monitoring Data Prior to the Manefay Slide at the Bingham Canyon Mine Using the Latest Analytical Techniques.....	302
<i>Williams, C. ; Ross, B. ; Zebker, M. ; Gaida, M. ; Morkeh, J. ; Robotham, M. E.</i>	
Assessment of Mine Water Inflow and Aquifer Interference.....	314
<i>Adhikary, D. P. ; Guo, H.</i>	
Back Analysis for Evaluation of Blast Re-Entry Analysis Techniques	321
<i>Tierney, S. ; Cumming-Potvin, D. ; Hopkins, M. ; Lett, J.</i>	
Back-Analysis of Viscoelastic Properties from Deep Shaft Radial Movement Measurements	331
<i>Kottke, P. ; Stavrou, A. ; Rama, A. ; Lagger, H. ; Pollak, S.</i>	
Bayesian Sensitivity Analysis to Enhance History Matching Through Shale Oil Reservoirs.....	337
<i>Al-Mudhafar, Watheq J. ; Al Lawe, Erfan M. ; Alsubaih, Ahmed</i>	
Behavior of a Salt Cavern When Creep Law Is Modified to Account for Low Deviatoric Stresses	346
<i>Bérest, P. ; Manivannan, S.</i>	
Behaviour and Realm of Application of Ubiquitous Joint Constitutive Models – Facts and Limitations.....	355
<i>Carvalho, J. L. ; Lawrence, K. P. ; Moffitt, K. ; Yetisir, M.</i>	
Bio-Cementation for Slope Soil Stabilization Against Surface Erosion: A Bench-Scale Preliminary Investigation.....	362
<i>Gowthaman, S. ; Nakashima, K. ; Ebina, K. ; Kawasaki, S.</i>	
Biot Coefficient of Gas Sorbing Rocks: A Coal Example	370
<i>Adelina, Lv. ; Hossein, Masoumi ; Hamid, Roshan</i>	
Biot's Effective Stress Coefficient Tensor Measurements on Mancos Shale.....	377
<i>Zhou, Xuejun ; Ghassemi, Ahmad</i>	
Bonded Particle Simulation of Cavity Expansion Test in Rock.....	391
<i>Molaei, Fatemeh ; Fakhimi, Ali</i>	
Calibration of Coal-Mass Model in a Longwall Mine: A Case Study.	399
<i>Rashed, G. ; Mohamed, K. ; Gearhart, D. F. ; Esterhuizen, G. S.</i>	
Case Studies of Parametric Assessments Using Numerical Modelling in Underground Mining	409
<i>Campbell, A. D. ; Rademacher, T. ; Putzar, G. ; Beck, D. A.</i>	

Casing Integrity Assessment of a Wellbore Crossing a Karst Cavity in a Carbonate Reservoir	422
<i>Peña, W. D. L. ; Pereira, F. L. G. ; Firme, P. A. L. P. ; Roehl, D. ; Pereira, L. C.</i>	
Cement Placement in Shale Fractures	429
<i>Szewczyk, D. ; Opedal, N.</i>	
Characteristics of Geothermal Reservoirs and Structural Geology for the Yangbajing Geothermal Field in Tibet, China	437
<i>Feng, Jianyun ; He, Zhiliang ; Zhang, Ying</i>	
Characterization of the Bakken Formation Using NMR and SEM Techniques	444
<i>Tomomewo, O. S. ; Jabbari, H. ; Badrouchi, N. ; Onwumelu, C. ; Mann, M.</i>	
Chemically-Induced Pressure Pulse for Unconventional Gas Fracturing: Modelling and Experimental Investigation	452
<i>Al-Nakhli, Ayman ; Ruwaili, Khalid</i>	
Chemo-Mechanical Investigation of CO₂-Fluid-Rock Interaction in CO₂ Storage and CO₂-EOR Processes in Unconventional Reservoirs	460
<i>Prakash, R. ; Kana Nguene, P. ; Seers, T. D. ; Noshadravan, A. ; Abedi, S.</i>	
A Classification and Description Method for Carbonate Reservoir Mechanical Properties Based on the Hoek-Brown Criterion	470
<i>Tan, Q. ; Li, S. G. ; Su, P. ; Weng, H. Y. ; Xiao, Y.</i>	
Cliff Stability at Tomb KV42 in the Valley of the Kings, Egypt: A First Approach to Numerical Modelling and Site Investigation	478
<i>Alcaíno-Olivares, R. ; Perras, M. A. ; Ziegler, M. ; Maissen, J.</i>	
Coal Rib Stability Based on the Strength Reduction of the Coal Mass Model	488
<i>Mohamed, Khaled M. ; Cheng, Zhao ; Rashed, Gamal</i>	
Coda Wave Interferometry Analysis on 4D Seismic Response From Poroelastic and Elastic Reservoirs	496
<i>Alcantara, K. F. ; Roehl, D.</i>	
Combining Discrete Element Method with Lattice Boltzmann Modeling to Advance the Understanding of the Performance of Proppant Mixtures	501
<i>Fan, Ming ; Han, Yanhui ; Gu, Ming ; McClure, James ; Ripepi, Nino ; Westman, Erik ; Chen, Cheng</i>	
Compaction-Induced Sand Control Failures in the Deepwater Gulf of Mexico	511
<i>Tjioe, M. ; Mikulencak, D. R. ; Yang, Y.</i>	
A Comparative Study of TBM Penetration Rate Assessment Based on the Rock Mass Properties	517
<i>Adoko, A. C. ; Alipov, A. ; Yabukov, K.</i>	
Comparing Biotite Elastic Properties Recovered by Nano-Indentation With Molecular Simulation Predictions	525
<i>Lanin, E. S. ; Acker, C. ; Yu, Z. ; Sone, H. ; Wang, B.</i>	
Comparing Different Methods of Permeability Measurement for Bakken Core Samples: Steady-State vs. Aspike & Multi-Pulse	533
<i>Badrouchi, N. ; Jabbari, H. ; Badrouchi, F. ; Tomomewo, O. S.</i>	
Comparison and Evaluation of Failure Criteria for Cement Sheath in the Downhole Situations	539
<i>Meng, M. ; Miska, S. ; Yu, M. ; Ozbayogu, E.</i>	
Comparison of Basic Geotechnical Parameters of Crushed Waste Glass with Natural and Manufactured Sands	546
<i>Kazmi, D. ; Williams, D. J. ; Serati, M.</i>	
Comparison of Bonded-Particle Numerical Model Results With Indirect Tension Experimental Results for Dionysos Marble	551
<i>Kaklis, K. N. ; Nomikos, P. P. ; Karatza, Z. T. ; Agioutantis, Z. G.</i>	
Comparison of the AE Monitoring Results Between the Hydraulic Fracturing and SC-CO₂ Fracturing	557
<i>Shan, W. ; Tiantai, L. ; Hongkui, G. ; Xiaoqiong, W. ; Ning, L. ; Mingsheng, Z. ; Shiyu, L. ; Yueyue, S.</i>	
Comparison of X-Ray CT and 3D Laser Profiler for Rock Fracture Surface Measurements	565
<i>Ueno, T. ; Yoshida, R. ; Nakashima, S. ; Yoshizu, Y. ; Song, C. ; Kishida, K.</i>	
Complex Fractures Propagations of Infill Well Based on Reservoir Stress Evolution After Long-Time Shale Gas Production	571
<i>Zhu, Haiyan ; Tang, Xuanhe ; Liu, Qingyou ; Song, Yujia ; Zhao, Yapu ; Li, Kuidong ; Xiao, Jialin ; McLennan, John D.</i>	
Complex Influences on the Behavior of Sheared Eau Claire Formation: Insights From Computed Tomography	583
<i>Gill, M. ; Moore, J. ; Brown, S. ; Mackey, P. ; Tennant, B. ; Crandall, D.</i>	
Complex Wellbore Pressure Management for Managed Pressure Drilling (MPD) Testing on a Modern Drilling Test Rig	591
<i>Chen, G. ; Munro, C. ; Wright, C. ; Olivas, V. ; Stuart, G. ; Johnson, R.</i>	

A Comprehensive Experimental Investigation on Stress Response Behavior of Organic-Rich Shale Fracture Permeability	601
<i>Lin, Chong ; Kang, Yili ; Li, Xiangchen ; Chen, Mingjun ; You, Lijun ; Wang, Qiaozhi</i>	
Comprehensive Laboratory Investigation and Model Fitting of Klinkenberg Effect and Its Role on Apparent Permeability in Various U.S. Shale Formations	609
<i>Li, Zihao ; Ripepi, Nino ; Chen, Cheng</i>	
Compressive Failure Model to Distinguish Different Type of Breakouts in EGS Wells: A Newberry Case Study	622
<i>Permata, Ilham A. ; Tutuncu, Azra N.</i>	
Computational Fluid Dynamics (CFD) Modeling of Proppant Static Settling Velocity in High Viscosity Friction Reducers	631
<i>Yuan, C. ; Ba Geri, M. ; Zeng, C. ; Imqam, A. ; Shen, L. ; Bogdan, A.</i>	
A Computational Methodology to Reconstruct the Capillary Pressure vs Saturation Curve of Rocks Through Sorptivity Tests	639
<i>Sarris, E. ; Gravanis, E. ; Papaloizou, L.</i>	
Contribution of Rifting Activities to Spatial and Temporal Variations of Seismic B-Values Along the Gulf of Aden Area, Case Study	647
<i>Basaloom, Abdullah ; Geri, Mohammed Ba</i>	
Controlling Drilling Fluid Properties Using Bio-Degradable Environmental Friendly Additives: Comparison Between Conventional Chemical (PAC-LV) and Eco-Friendly Drilling Fluid Additives	652
<i>Al-Hameedi, A. T. ; Alkinani, H. H. ; Dunn-Norman, S. ; Alkhamis, M. M. ; Alshammari, A. F. ; Al-Alwani, M. A. ; Mutar, R. A.</i>	
Controlling Induced Seismicity During Hydraulic Stimulation of a 6 Km Deep Enhanced Geothermal System in Finland	663
<i>Dresen, G. ; Kwiatek, G. ; Bohnhoff, M. ; Saarno, T. ; Heikkinen, P. ; Ader, T. ; Chendorain, M. ; Malin, P. ; Leary, P. ; Passmore, P. ; Valenzuela, S. ; Kukkonen, I. ; Bluemle, F. ; Martinez-Garzon, P. ; Wollin, C.</i>	
CO₂ Sequestration/EOR in Bartlesville Sandstone Reservoir Bearing Heavy Oil	668
<i>Hasan, Al-Saedi N. ; Ralph, Flori E.</i>	
Coupled Effects of Diagenesis and Deformation on Fracture Evolution in Deeply Buried Sandstones	678
<i>Wang, Q. ; Laubach, S. E. ; Fall, A.</i>	
Coupled Geomechanics Simulation of Dynamic Fractures with Continuum Damage Mechanics and Its Influence on Production	684
<i>Cai, Xin ; Liu, Wei ; Shen, Xinpu ; Zhang, Zhang</i>	
Coupled Hydro-Mechanical Modeling of Injection-Induced Seismicity in the Multiphase Flow System	691
<i>Chang, K. W. ; Yoon, H. ; Martinez, M. J. ; Newell, P.</i>	
A Coupled Thermo-Mechanical Model Based on TOUGH-FEMM for Simulating Thermal Cracking in Rocks	696
<i>Tao, Siji ; Tang, Xuhai</i>	
Coupled THMC Analysis for Predicting Hydro-Mechanical Evolution in Siliceous Mudstone	701
<i>Ogata, S. ; Yasuhara, H. ; Aoyagi, K. ; Kishida, K.</i>	
Coupled Ultrasonic and Digital Imaging of Crack Initiation and Growth in Prismatic Lyon Sandstone Rocks	707
<i>Garg, Prasoon ; Shirole, Deepanshu ; Hedayat, Ahmadreza ; Griffiths, D. V.</i>	
Coupling Geomechanics With Diffusion/Adsorption Mechanisms to Enhance Bakken CO₂-EOR Modeling	717
<i>Ellafi, A. ; Jabbari, H.</i>	
Crack Behaviors Across the Coal-Rock Interface and the Acoustic Emission Response Characteristics in Hydraulic Fracturing	726
<i>Jiang, Y. L. ; Liang, W. G. ; Li, Z. G.</i>	
Creation of Multi-Stranded Fractures in Homogeneous Rocks	733
<i>Manchanda, R. ; Zheng, S. ; Sharma, M. M.</i>	
Creep Behavior of Musandam Limestone Fractures Under Confining Pressures Less than 1 MPa – Initial Investigation	744
<i>Kang, H. ; Germaine, J. T. ; Einstein, H. H.</i>	
CT-Scan Image Processing for Accurate Pore Network Modeling and Core Samples 3D Printing: Polynomial Interpolation & Geostatistical QC	752
<i>Almetwally, A. G. ; Jabbari, H.</i>	
Cutoff Modeling for Drift Sealing in Underground Nuclear Waste Repositories	760
<i>Sharma, P. ; Perras, M. ; Sharma, J. ; Lam, T. ; Kasani, H. ; Walton, G.</i>	
Data Analytics Quickly Predict Number of Fracture Stages in Horizontal Wells	768
<i>Alzahabi, Ahmed ; Kamel, Ahmed ; Trindade, A. Alexandre ; Baustian, Wade</i>	

VOLUME 2

Defining SRV in Naturally Fractured Reservoirs; How Is It Related to Production?	778
<i>Wang, Y. ; Dusseault, M. B.</i>	
Deformation and Failure Mechanism of a Collapse Induced by Underground mining—A Study of the Pusa Collapse in Guizhou Province of China	796
<i>Shi, W. B. ; Yu, X. X. ; Sherizadeh, T. ; Sunkpal, M. ; Wang, X. M. ; Kulatilake, P. H. S. W.</i>	
Deformation Characteristics of Unconsolidated Sandstone and Soft Mudstone and Their Effects on Drilling Engineering	804
<i>Weng, H. Y. ; Deng, J. G. ; Tan, Q. ; Liu, H. L.</i>	
DEM Models to Predict Side Shear Resistance of Rock-Socketed Piles Considering Socket Roughness	811
<i>Gutiérrez-Ch, J. G. ; Melentijevic, S. ; Senent, S. ; Jimenez, R.</i>	
Design and Construction of a Dense Array of Small Diameter Holes in a Large Cavern Sidewall	818
<i>Elmo, Davide ; Mielman, Amichai ; Rozen, Arnon ; Tzucker, Dan</i>	
Design Aspects of Optimized Zipper Frac	826
<i>Algarhy, A. ; Soliman, M. ; Heinze, L. ; Gorell, S. ; Henderson, S. ; Nasr-El-Din, H. ; Gabry, M.</i>	
De-Stress Blasting Strategy: Case Studies for Mining in Highly Stressed Sill Pillars at Vale's Ontario Operations	834
<i>Yao, M. ; Chinnsane, D. R. ; Sampson-Forsythe, A.</i>	
Detection of Deep Cavities and of Shallow Buried Objects with a Hilly Ground Surface	841
<i>Adler, P. M. ; Pazdniakou, A.</i>	
Determination of Temperature, Electrical Conductivity, Water Chemistry, and Density Profiles in the Water Column of a Closed Mine	848
<i>Roggenthen, W. M. ; Scheetz, J. W.</i>	
Developing a Rock Mechanical Coupling Study Over Drilling Through Hydrate Bearing Sediments.	856
<i>Ansari, Ubedullah ; Cheng, Yuanfang ; Li, Qingchao ; Han, Zhongying</i>	
Development of a 3D Numerical Tool for Assessing the Mechanical Impact of a Fault-Rupture by Normal Fault on Underground Excavations	862
<i>Kim, B. H. ; Larson, M. K.</i>	
The Development of a New Laboratory Technique to Monitor the Consolidation Process of Control Additives During Propped Hydraulic Fracturing Treatment	870
<i>Alqam, M. H. ; Abass, H. H.</i>	
Development of Fractal-Fuzzy Evaluation Methodology and Its Application for Seismic Hazards Assessment Using Microseismic Monitoring in Coal Mining	877
<i>Cai, W. ; Durucan, S. ; Shi, J. Q. ; Cao, W. ; Agrawal, H. ; Korre, A. ; Jamnikar, S. ; Roser, J.</i>	
Development of Novel Workflow to Replicate Pore Network of Porous Core Samples Through 3D Printing Technology	887
<i>Almetwally, A. G. ; Jabbari, H.</i>	
Development of Small Scale Biocemented Rocks Based on Natural Beachrock Cement Characteristics as a Novel Approach Towards Coastal Erosion Mitigation.	895
<i>Nayanthara, P. G. N. ; Dassanayake, A. B. N. ; Kazunori, N. ; Kawasaki, S.</i>	
Development Specific Modeling of Hydraulic Fracture Induced Poromechanical Pressure Responses in Offset Wells	904
<i>Coenen, E. W. C. ; Spicer, S. A.</i>	
DFN Variability Analysis Through Voxelization	913
<i>Junkin, W. R. ; Ben-Awuah, E. ; Fava, L.</i>	
Discussion on the Effective Stress Coefficient in Unconventional Fracture-Matrix Gas Transport	923
<i>Wang, Yi ; Liu, Shiming ; Yue, Wenting ; Zhao, Yixin</i>	
Distinct Element Method Simulation of Creep Behaviour	931
<i>Gutiérrez-Ch, J. G. ; Senent, S. ; Jimenez, R.</i>	
Dynamic Behaviors of Sandstone under True Triaxial Confinements: Triaxial Hopkinson Bar Tests	936
<i>Liu, Kai ; Zhang, Qianbing</i>	
Dynamic Fracture Network Generation: A New Method for Growing Fractures According to Their Deformation History	946
<i>Libby, S. ; Hartley, L. ; Turnbull, B. ; Cottrell, M. ; Bym, T. ; Josephson, N. ; Munier, R. ; Selroos, J. O. ; Mas-Ivars, D.</i>	
Dynamic Fracture Process Analysis of Controlled Blasts to Minimize the Excavation Damage Zone in Underground Excavations	953
<i>Min, G. J. ; Park, S. W. ; Oh, S. W. ; Cho, S. H. ; Kim, B. H. ; Fukuda, D.</i>	
A Dynamic Model of the Drilling Action of Percussive Tools	961
<i>Song, X. ; Kane, A. ; Aamo, O. ; Detournay, E.</i>	

Dynamic Neural Network Model to Predict the Rate of Penetration Prior to Drilling	969
<i>Alkinani, H. H. ; Al-Hameedi, A. T. ; Dunn-Norman, S. ; Flori, R. E. ; Al-Alwani, M. A. ; Mutar, R. A.</i>	
Dynamic Shear Fracture and SEM Study of Granite and Marble	980
<i>Wu, G. ; Xing, H. ; Zhang, Q. ; Dehkhoda, S.</i>	
Dynamic Stability Analysis of the Laizigou Phosphogypsum Tailings Pond	989
<i>Wang, Tao ; He, Yuan ; Zhao, Xianyu ; Wang, Suifeng</i>	
Dynamic Water Vapor Sorption on Marcellus Shales: Equilibrium, Thermodynamic and Kinetic Analyses	996
<i>Sang, Guijie ; Liu, Shimin ; Elsworth, Derek</i>	
The Effect of Anisotropy on the Borehole Instability in Carbonate Reservoir	1003
<i>Zeng, Chao ; Deng, Wen</i>	
The Effect of Blasting on Falls of Ground in Underground Mines	1012
<i>Batista, G. A. P. ; Da Silva, J. H. ; Ramires, J. E. F. ; Carvalho, A. S. ; Campos, M. P. ; Gontijo, A. ; Matos, A. R.</i>	
Effect of Borehole Notch Properties on Breakdown Pressure	1018
<i>Altammar, Murtadha J. ; Sharma, Mukul M. ; Alruwaili, Khalid M.</i>	
Effect of Capillary Force on Performance of Shale Rock Fracturing	1025
<i>Liu, B. L. ; Suzuki, A. ; Ito, T.</i>	
Effect of Cyclic Loading on Cement Sheath During Staged Fracturing	1032
<i>Li, Xiaojiang ; Liu, Rengguang ; Zhou, Shiming ; Tao, Qian ; Lu, Peiqing ; Zeng, Yijin</i>	
Effect of Depletion-Induced Stress Reorientation on Infill Well Fracture Propagation	1039
<i>Yang, L. ; Zhang, F. ; Duan, Y. ; Yan, X. ; Liang, H.</i>	
Effect of Drawdown Evolution on the Hydraulic Fractured Well Performance. Can We Minimize It and Optimize Well Economy?	1051
<i>Hryb, D. E. ; De Marzio, L. ; Suarez, M. I.</i>	
Effect of Drill Cuttings Mechanical Properties on Filter Cake Properties and Mud-Filtrate Invasion	1058
<i>Ba Geri, Badr S. ; Mahmoud, M. ; Elkatatny, S. ; Patil, S. ; Benaafi, M. ; Mohamed, A.</i>	
Effect of Fault Roughness on Injection-Induced Seismicity	1064
<i>Candela, Thibault ; Peters, Elisabeth ; Van Wees, Jan Diederik ; Fokker, Peter ; Wassing, Brecht ; Ampuero, Jean Paul</i>	
Effect of High-Density Water-Based Drilling Fluid on the Mechanical Properties of the Drilled Formation in Horizontal Wells	1070
<i>Mohamed, A. K. ; Benaafi, M. ; Elkatatny, S. M. ; Bageri, B. S.</i>	
The Effect of Hydraulic Fracturing in Coal Seam Using Viscoelastic Surfactant Fracturing Fluid	1075
<i>Yang, Mengmeng ; Ge, Zhaolong ; Lu, Yiyu ; Chai, Chengjuan ; Zhou, Zhe</i>	
The Effect of Inorganic Salt Transport and Two-Phase Seepage on Hydrate Wellbore Stability	1082
<i>Wei, J. ; Cheng, Y.</i>	
Effect of Irregular Shape and Wellbore Breakout on Fluid Dynamics and Wellbore Stability	1089
<i>Kiran, R. ; Salehi, S. ; Mokhtari, M. ; Kumar, A.</i>	
Effect of Layering in the Simultaneous Propagation of Fluid-Driven Fractures: A Coupled Hydro-Mechanical Model Using the Extended Finite Element Method	1100
<i>Mehryaar, E. ; Moulaeifard, S. ; Goncalves Da Silva, B.</i>	
Effect of Loading Rate on Tensile Strength of Coals in Underground Mines in Datong Coalfield, China	1112
<i>Zhang, Jimwang ; Li, Meng</i>	
Effect of Mineral Orientation on Roughness and Toughness of Mode I Fractures	1117
<i>Jiang, Liyang ; Yoon, Hongkyu ; Bobet, Antonio ; Pyrak-Nolte, Laura J.</i>	
The Effect of Multi-Hydraulic Fracturing on Casing Deformation in Shale Gas Horizontal Wells	1122
<i>Zhang, Xin ; Li, Jun ; Liu, Gonghui ; Zhao, Chaojie ; Yao, Yong ; Jiao, Jianfang</i>	
The Effect of Natural Fracture Complexity on Fracture Propagation in Deep Shale Based on True Tri-Axial Experiments	1130
<i>Wang, Li ; Wan, Liming ; Chen, Wangang ; Yu, Xi ; Hou, Bing</i>	
Effect of Natural Fracture Network Properties on Hydraulic Fracturing Stimulation in Unconventional Formations	1137
<i>Ray, Baidurja ; Inyang, Ubong ; Bai, Jie</i>	
Effect of Shear Slippage of Vertically Crossed Layer Interface on Hydraulic Fracture Height Growth	1149
<i>Kresse, O. ; Weng, X.</i>	
The Effect of Silica Content on the Changes in the Mechanical Properties of Class G Cement at High Temperature from Slurry to Set	1157
<i>Mahmoud, Ahmed Abdulhamid ; Elkatatny, Salaheldin</i>	
Effect of the State of Stress in the Fracturing and Micro-Seismic Activity of Hydraulically-Fractured Granite	1162
<i>Gunarathna, G. S. ; Goncalves Da Silva, B.</i>	

Effective Cement Stress in Well Completions: An Important Unknown	1175
<i>Welch, N. J. ; Frash, L. P. ; Carey, J. W.</i>	
An Effective Optimization Method of One-Step Sandstone Acid Systems at Formation Conditions	1181
<i>Yao, Erdong ; Li, Yuan ; Wang, Jie ; Zhang, Le ; Cao, Cong ; Zhou, Fujian</i>	
Effects of Fluid Diffusivity on Hydraulic Fracturing Processes Using Visual Analysis	1188
<i>Baptista-Pereira, C. ; Goncalves Da Silva, B.</i>	
Effects of Longwall-Induced Subsurface Deformations and Permeability Changes on Shale Gas Well Integrity and Safety Under Shallow Cover	1195
<i>Su, D. W. H. ; Zhang, P. ; Dougherty, H. ; Van Dyke, M. ; Minoski, T. ; Schatzel, S. ; Gangrade, V. ; Watkins, E. ; Addis, J. ; Hollerich, C.</i>	
The Effects of Roughness and Mechanical Property of Rough Fracture Surface on Hydraulic Fracture Conductivity	1213
<i>Lai, Jie ; Guo, Jianchun ; Wu, Kaidi ; Chen, Chi ; Wang, Kun ; Wang, Shibin ; Lu, Cong ; Zhao, Xuepei ; An, Huan</i>	
Effects of Roughness on Permeability Evolution and Frictional Behavior of Fractures Under Shear	1219
<i>Fang, Y. ; Elsworth, D. ; Ishibashi, T. ; Zhang, F.</i>	
Effects of Spatial Variation of Cluster Entry Friction on Hydraulic Fracture Propagation in Multistage Fracturing	1228
<i>Nikolskiy, D. ; Lecampion, B. ; Pourpak, H. ; Onaisi, A.</i>	
Effects of Transient Axial Stress or Pore Pressure Disturbances on the Permeability of Shikotsu Welded Tuff	1239
<i>Boeut, S. ; Fujii, Y. ; Kodama, J. ; Fukuda, D. ; Dassanayake, A. B. N.</i>	
Efficient Incorporation of a Contact Model into a Fully Implicit Geomechanical Fracture Simulator	1247
<i>Zheng, Shuang ; Manchanda, Ripudaman ; Sharma, Mukul M.</i>	
EGS Collab Project: Status, Tests, and Data	1255
<i>Kneafsey, T. J. ; Dobson, P. F. ; Ajo-Franklin, J. B. ; Guglielmi, Y. ; Valladao, C. A. ; Blankenship, D. A. ; Schwering, P. C. ; Knox, H. A. ; White, M. D. ; Johnson, T. C. ; Strickland, C. E. ; Vermeul, V. R. ; Morris, J. P. ; Fu, P. ; Mattson, E. ; Neupane, G. H. ; Podgorney, R. K. ; Doe, T. W. ; Huang, L. ; Frash, L. P. ; Ghassemi, A. ; Roggenthen, W.</i>	
Elastic and Acoustic Properties of Dry and Saturated Fontainebleau Sandstones	1274
<i>Nguyen, T. A. ; Pazdiakou, A. ; Adler, P. M.</i>	
Elastic Anisotropy in Deep Carbonate Reservoir	1282
<i>Al-Dughaimi, S. ; Ali, A. Z. ; Muqtadir, A. ; Kandil, M. E. ; Dvorkin, J.</i>	
Enabling Technologies for Monitoring and Forecasting: Applications in Slope Stability and Dam Safety	1290
<i>Tehrani, Faraz S. ; Costa, Ana Laura ; Peters, Ton</i>	
Engineering Geological Characterization of the 2014 Jure Nepal Landslide: An Integrated Field, Remote Sensing-Virtual/Mixed Reality Approach	1298
<i>Mysiorek, J. ; Onsel, I. E. ; Stead, D. ; Rosser, N.</i>	
Estimating Far-Field Stress Using the Mean of Local Stresses	1310
<i>Gao, K. ; Lei, Q. ; Bozorgzadeh, N. ; Chau, V.</i>	
Estimating Mechanical Properties of Sandstone from Petrographic and Physico-Mechanical Indices	1319
<i>Rekoske, J. ; Walton, G.</i>	
Estimation of Elastic Properties of Bakken Formation Using an Artificial Neural Network Model	1329
<i>Badrouchi, F. ; Badrouchi, N. ; Rabiei, M. ; Rasouli, V.</i>	
Estimation of Geomechanical Property Distributions Using a Data Assimilation Procedure	1341
<i>Tang, Huiying ; Hu, Xinrui ; Hu, Shuyong ; Dai, Cheng ; Zhu, Haiyan ; Zhang, Liehui</i>	
Evaluating Characterization Methods for Joint Surface Roughness	1351
<i>Packulak, T. R. ; Bonneau, D. A. ; Dossett, W. C. ; Rudderham, G. A. ; Day, J. J.</i>	
Evaluating Stress and Strain by Integrating Microseismicity with Geomechanical Modeling	1359
<i>Angus, D. A. ; Viegas, G. ; Bosman, K. ; Tremblay, F.</i>	
Evaluation Method for Rigidity of Tunnel Concrete Lining Based on Its Vibration Characteristics	1368
<i>Taniguchi, Tetsuya ; Jiang, Yujing ; Zhang, Xuepeng ; Kusaba, Masaya ; Yamato, Takahide</i>	
Evaluation of Dynamic Flow and Production Behavior of Biogenic Methane Reservoirs	1376
<i>Pandey, R. ; Harpalani, S.</i>	
Evaluation of Influences of Mudstone Barriers on the Water Injection Performance in SAGD Wells	1383
<i>Meng, H. ; Jin, Y. ; Lin, B. T. ; Wang, P. F. ; Lyu, Z. L. ; Liu, X.</i>	
Evaluation of Parameters Affecting the Energy Accumulation in Longwall Mining	1390
<i>Agrawal, H. ; Durucan, S. ; Cao, W. ; Cai, W.</i>	
Evaluation of the Seismic Response of the Rock Mass Using a Model of Seismic Aftershocks of the Epidemic Type	1400
<i>Gonzalez, F. J. ; Vallejos, J. A.</i>	

Evaluation on Ground Suitability of Shield Tunneling Based on Rock Engineering System	1409
<i>Cheng, Chihao ; Liao, Shaoming ; Liu, Mengbo ; Chen, Lisheng</i>	
Evidence of a Consistent Process of Rock Fracturing During Material Flow Within Ore Columns – 25 Years of Fragmentation Experience at the El Teniente Mine	1416
<i>Brzovic, A. ; Celhay, F. ; Gonzalez, R. ; Hurtado, J. P.</i>	
Evolution of Coal Permeability to Gaseous CO₂, N₂ and He Under In-Situ Stresses	1426
<i>Sheng, Zhi ; Derek, Elsworth</i>	
Expansion of Horizontal Wellbore Stability Model for Elastically Anisotropic Shale Formations With Anisotropic Failure Criteria: Permian Basin Case Study	1434
<i>Wang, J. ; Weijermars, R.</i>	
Experimental and Numerical Investigation into Hydraulic Fracture and Natural Fracture Interaction in Shale Formations	1457
<i>Yildirim, B. ; Durucan, S. ; Cao, W. ; Cai, W. ; Shi, J. ; Korre, A. ; Wolf, K-H.</i>	
Experimental and Numerical Investigation of Hydraulic Fracturing Under Reservoir Conditions	1467
<i>Zhu, G. L. ; Sajji, R. P. ; Mubarak, H. ; Sousa, R. L. ; Sassi, M. ; Abu Al-Rub, R. K.</i>	
Experimental and Numerical Investigation of the Microscale Failure Mechanism of a Porous Sandstone During Brazilian Tensile Test Conditions	1474
<i>Chen, B. ; Latham, J. P. ; Xiang, J. ; Bakker, R. R.</i>	
Experimental and Numerical Investigation on the Cement Sheath Sealing Failure Induced by Large-Scale Multistage Hydraulic Fracturing in Shale Gas Well	1480
<i>Wang, Lei ; Yang, Chunhe ; Guo, Yintong ; Chang, Xin ; Xiao, Jialin ; Song, Yafen</i>	
Experimental Investigation of Anisotropic Brittleness Under Confining Pressure for Gas Shale Rocks	1489
<i>Ma, Tianshou ; Peng, Nian ; Chen, Ping ; Zhu, Gongsheng ; Xia, Hongquan</i>	
An Experimental Investigation of Cyclic Cryogenic Fracturing in Coalbed Methane Reservoirs	1497
<i>Yang, Ruiyue ; Hong, Chunyang ; Huang, Zhongwei ; Yang, Zheqi ; Huang, Pengpeng</i>	
Experimental Investigation on the Characteristics of Complex Fractures Created by Supercritical Carbon Dioxide in a Layered Tight Sandstone Formation	1505
<i>Li, S. H. ; Ma, X. F. ; Zhang, S. C. ; Zou, Y. S. ; Qi, S. L. ; Ge, Q. ; Li, N. ; Cao, T.</i>	
Experimental Investigation on the Fracture Diverting Mechanism and Plugging Efficiency Using 3D Printing Fractures	1512
<i>Li, Ben ; Zhou, Fujian ; Yuan, Lishan ; Li, Hui ; Cheng, Jiaqi ; Tan, Yanxin ; Zhang, Yang ; Xian, Bo ; Fan, Wentong</i>	
Experimental Investigation on the Fracture Propagation Characteristics of the Continental Shale Induced by Hydraulic Fracturing	1521
<i>Li, Xiao ; He, Peng-Fei ; He, Jian-Ming ; Zhao, Zhi-Heng</i>	
Experimental Investigation on the Rock Damage Behaviors of Sandstone Containing a Pre-Existing 3-D Surface Flaw Under Cyclic Uniaxial Compression	1528
<i>Ou, Chuanjing ; Cao, Ping ; Cao, Rihong ; Meng, Jingjing ; Lin, Hang ; Chen, Yu ; Liu, Taoying</i>	
Experimental Research on the Effect of Cold Water Injection on the Mechanical Properties and Brittleness of Granite in HDR	1538
<i>Li, N. ; Zhang, S. C. ; Ma, X. F. ; Zou, Y. S. ; Cao, T.</i>	
Experimental Study of Injection Rate Influence on Hydraulic Fracturing	1546
<i>Tiancheng, Liang ; Chuanyou, Meng ; Haifeng, Fu ; Bo, Cai ; Xin, Wang ; Yun, Xu ; Yunzhi, Liu</i>	

VOLUME 3

Experimental Study of the Effects of the Roughness, the Interlocking and the Material Mechanical Properties on the Apparent Cohesion of Unbonded Rock Joints in the Context of Dam Foundations	1554
<i>Rulliere, A. ; Rivard, P. ; Peyras, L. ; Breul, P.</i>	
Experimental Study of the Hydro-Mechanical Response of Tight Sarvak Carbonates to Hydrostatic and Deviatoric Stress Changes	1560
<i>Ahmadinejad, A. ; Rahimzadeh Kivi, I. ; Ameri, M. J. ; Khatibi, S. A.</i>	
The Experimental Study of the Shale Bedding Impact on Fracture Energy Anisotropy	1571
<i>Pan, R. ; Zhang, G. Q. ; Xing, Y. K. ; Li, S. Y. ; Zheng, X. L. ; Tang, M. R.</i>	
An Experimental Study of the Wear of Polycrystalline Diamond Compact Bits	1577
<i>Michaels, I. H. ; Mostofi, M. ; Richard, T.</i>	
Experimental Study of Tip Screenout Fracturing by Using CT Scanner	1586
<i>Ito, T. ; Yoshida, H. ; Yamamoto, K. ; Tsuchiya, Y.</i>	
Experimental Study on Drag Reduction Performance in Fracture	1592
<i>Fan, Fan ; Zhou, Fujian ; Liu, Zhiyu ; Yang, Kai</i>	

Experimental Study on Hydraulic Fracture Propagation in Conglomerate Reservoirs	1598
<i>Xv, Changzhuo ; Zhang, Guangqing ; Yanjun, Lyu ; Wang, Pu</i>	
Experimental Study on Imitation Soil Nail Reinforcing Technology for Deep Broken Roadway Support in Jinchuan Mine	1603
<i>Huayou, Su ; Ning, Yang ; Jin, Huang</i>	
Experimental Study on Mechanical Properties of Crushed Coal Seams Enhanced by Freezing	1608
<i>Zheng, Xuelin ; Zhang, Guangqing ; Li, Zhaoxing ; Chen, Lei ; Pan, Rui ; Liu, Rui</i>	
Experimental Study on Mechanical Properties of Sandstone Under Freeze-Thaw Condition	1615
<i>Pu, Hai ; Sha, Ziheng ; Liu, Ding ; Liu, Senhao</i>	
Experimental Study on Sand Control in Unconsolidated Sandstones by Chemical Injection and Hydraulic Fracturing	1625
<i>Palencia Yrausquin, E. ; Liu, W. ; Zhou, B. ; Kamgue Lenwoue, A. R.</i>	
Experimental Study on Sand Production of Natural Gas Hydrate Reservoir	1635
<i>Ding, Jiping ; Cheng, Yuanfang ; Yan, Chuanliang ; Han, Songcai</i>	
Experimental Study on the Anisotropy of Shale with Wave Velocity and Permeability	1642
<i>Wang, X. Q. ; Wu, S. ; Ge, H. K. ; Chen, H. ; Wang, J. B.</i>	
Experimental Study on the Conductivity of Chelating Acid Fracturing in Ultra-Deep Compact Sandstone	1650
<i>Wang, Jin ; Zhou, Fujian ; Zhang, Lufeng ; Wang, Yuechun</i>	
An Experimental Study on the Fracture Mechanics Characteristics of Heat-Treated Hot Dry Rock Samples Under Different Loading Rates	1656
<i>Wang, Daobing ; Yu, Bo ; Yan, Xingming ; Sun, Dongliang ; Han, Dongxu ; Qin, Hao ; Zhang, Wenbao</i>	
Experimental Study on the Impact of CO₂-Brine-Rock Interaction on Rock Properties and Fracture Propagation During Supercritical CO₂ Fracturing in Chang-7 Tight Sandst...	1664
<i>Li, S. H. ; Zhang, S. C. ; Zou, Y. S. ; Qi, S. L. ; Ma, X. F. ; Li, N. ; Chen, M.</i>	
An Experimental Study on the Impacts of Different PDC Cutters Arrangements on a Bit on Rock Cutting Process	1672
<i>Sheikhrezaei, K. ; Akbari, B.</i>	
An Experimental Study to Investigate the Effects of Temperature and Confining Pressure on Unconventional Rock Mechanical Properties	1679
<i>Ramezani, M. ; Emadi, H. ; Elwegaa, K.</i>	
Experiments and Modeling of Acid Dissolution Fingering	1686
<i>Papamichos, E. ; Stroggylis, P.</i>	
An Extended Finite Element Method for Hydro-Mechanically Coupled Analysis of Mud Loss in Naturally Fractured Formations	1697
<i>Xia, Yang ; Jin, Yan ; Huang, Zhao ; Lu, Yunhu ; Wang, Hanqing</i>	
Facilitation of Fluid-Driven Fracture Propagation in Porous Media by Injection of Reactive Fluids	1705
<i>Shovkun, I. ; Espinoza, D. N.</i>	
Fall of Ground Characterization: A Case Study of BCL Mine, Botswana	1711
<i>Adoko, A. C. ; Zhalel, M. ; Phumaphi, P. T.</i>	
The Fast Marching Method for Simulation of Coupled Flow and Geomechanics and Fault Activation	1721
<i>Yoon, Sangcheol ; Kim, Jihoon</i>	
Fiber Bragg Grating-Based Investigation on Reactivating Natural Fractures by Hydraulic Fracturing	1728
<i>Lyu, Y. J. ; Zhang, G. Q. ; Zhuang, J. M. ; Zhao, Z. F.</i>	
Field Development Recommendation Utilizing 3D Geomechanical Model for an Unconventional Play in Colombia	1733
<i>Medina, Leonardo Arias ; Tutuncu, Azra N.</i>	
Formation Evaluation and Hydraulic Fracture Modeling of Unconventional Reservoirs: Sab'atayn Basin Case Study	1759
<i>Ellafi, A. ; Ba Geri, M. ; Bubach, B. ; Jabbari, H.</i>	
Formation of a Sealing Well Barrier by the Creep of Rock Salt: Numerical Investigations	1769
<i>Orlic, B. ; Wollenweber, J. ; Geel, C. R. ; Vandeweyer, V. P. ; Meekes, J. A. ; Heerens, G. J. ; Terhegge, J. H.</i>	
Fracability Evaluation of Tight Sandstone Reservoirs Based on Fractal Dimension and Fracture Angle After the Rock Mechanics Triaxial Experiments	1776
<i>Zhang, Binhai ; Chen, Zhengrong ; Cao, Yanfeng ; Guo, Shisheng ; Peng, Chengyong ; Tao, Lei</i>	
Fracture Conductivity Analysis on the Degradable Particle Diverter Combined with Engineered Proppant	1787
<i>Zhang, Lufeng ; Zhou, Fujian ; Zhang, Shicheng ; Wang, Jie ; Wang, Jin ; Pournik, Maysam</i>	
Fracture Hits Analysis for Parent-Child Well Development	1792
<i>Anusarn, Sangnimuan ; Li, Jiawei ; Wu, Kan ; Wang, Yonghong ; Shi, Xiaozhi ; Yin, Congbin ; Li, Yanchao</i>	
Fracture Propagation Induced by Water Injection in Poorly Consolidated Rocks	1800
<i>Gao, Y. ; Hakobyan, Y. ; Detournay, E.</i>	

Fracturing Fluids Impact on Unconventional Shale Rock Mechanical Properties and Proppant Embedment	1809
<i>Singh, V. K. ; Wolfe, C. ; Jiao, D.</i>	
From Aseismic Slip to Seismicity During Fluid Injection Controlled by Interactions Between Stress Perturbation, Permeability Increases and Fault Structure	1816
<i>Cappa, F. ; De Barros, L. ; Wynants-Morel, N. ; Guglielmi, Y. ; Birkholzer, J. ; Nussbaum, C.</i>	
From Two-Phase Flow to Gas Fracturing into Callovo-Oxfordian Claystone	1823
<i>De La Vaissière, Rémi ; Talandier, Jean ; Armand, Gilles ; Vu, Minh-Ngoc ; Cornet, Francois Henri</i>	
Fully Autonomous Drone for Underground Use	1832
<i>Hennage, D. H. ; Nopola, J. R. ; Haugen, B. D.</i>	
Fully-Coupled Three-Dimensional Finite Element Simulations of the Interaction Between a Hydraulic Fracture and a Pre-Existing Natural Fracture	1841
<i>Almulhim, O. A. ; Paluszny, A. ; Thomas, R. N. ; Zimmerman, R. W.</i>	
Gas Saturated Coal Failure Envelope Establishment Through Single Core Multistage Triaxial Loading Tests	1849
<i>Fan, Long ; Liu, Shimin</i>	
Gas Storage in Compartmentalized Reservoirs: A Numerical Investigation on Possible “Unexpected” Fault Activation	1857
<i>Teatini, P. ; Ferronato, M. ; Franceschini, A. ; Frigo, M. ; Janna, C. ; Zoccarato, C. ; Isotton, G.</i>	
A General Review on Rock Stability Due to CO₂ Injection	1866
<i>Reppas, N. ; Gui, Y. L. ; Wetenhall, B.</i>	
Geomechanical Characterization of a Granodiorite Rock Specimen from Patua Geothermal Field	1877
<i>Kc, B. ; Foroutan, M. ; Kamali-Asl, A. ; Ghazanfari, E. ; Cladouhos, T. T.</i>	
Geomechanical Characterization of Reservoir Rocks in the Southern Taranaki Basin, New Zealand	1886
<i>Hill, S. H. ; Villeneuve, M. C. ; Bassett, K. N.</i>	
Geomechanical Characterization of the Tight Sandstones of Lajas Formation, Neuquén Basin, Argentina	1895
<i>Chiachiarelli, F. C. ; Merchán, V.</i>	
Geomechanical Evaluation of Natural Shear Fractures in the EGS Collab Experiment 1 Test Bed	1901
<i>Frash, L. P. ; Welch, N. J. ; Carey, J. W.</i>	
Geomechanical Evaluation of the Stability of the Caprock Roof and Salt Boundary of an Abandoned Cavern in Salt Dome	1908
<i>Park, B. Y.</i>	
Geomechanical Investigation of the Carbon Sequestration Reservoir at Rock Springs Uplift, Wyoming, USA	1916
<i>Ng, K. ; Yu, H. ; Wang, H. ; Kaszuba, J. ; Alvarado, V. ; Grana, D. ; Campbell, E.</i>	
Geomechanical Modeling of Sediment Stress-Level Dependency With Application to a Salt System	1922
<i>Nikolinakou, M. A. ; Heidari, M. ; Flemings, P. B. ; Hudec, M. R.</i>	
Geomechanics Numerical Code for Modelling Contact in Fractures and Other Discontinuities Using Virtual Element Method	1928
<i>Kubeyev, A. ; Maier, C. ; Doster, F.</i>	
Geometric and Fractal Analysis of Complex Wormholes Resulting from Gypsum Core Flood Tests	1941
<i>Li, W. ; Einstein, H. H. ; Germaine, J. T.</i>	
Geometry of Shear Fractures and Fracture Permeability	1952
<i>Carey, J. W. ; Frash, L. P. ; Euser, B. ; Welch, N. ; Lei, Z. ; Rougier, E.</i>	
A Geostatistical Approach to Modelling DFN: A Block Size Perspective	1958
<i>Wang, C. J. ; Vecchiarelli, A.</i>	
Global vs Local Strain Measurements in Triaxial Tests – Implications	1968
<i>Perbawa, A. ; Gramajo, E. ; Finkbeiner, T. ; Santamarina, J. C.</i>	
Ground Control Management at Alamos's Young Davidson Mine	1976
<i>Xu, Y. ; Blake, T. ; Feng, X-T. ; Cai, M. ; Xu, Y.</i>	
How Can Accumulated Damage Lead to a Violent Rock Failure? an Innovative Experimental Study for Rockburst	1992
<i>Akdag, S. ; Bruning, T. ; Karakus, M. ; Nguyen, G. D.</i>	
How Hydraulic Fractures Interact with Natural Fractures: A Review and New Observations	1998
<i>Kolawole, Oladoyin ; Ispas, Ion</i>	
How Strong Is Your Fault?	2024
<i>Brem, A. G. ; Abd Rahim, M. H. ; Zhang, T. ; Chan, A. W.</i>	
Hydraulic Fracture Propagation and Its Interaction with Open and Sealed Natural Fractures	2030
<i>Rueda, C. J. ; Mejia, S. C. ; Roehl, D.</i>	
Hydraulic Fracture Propagation in Strike-Slip Regime With Weak Interfaces	2039
<i>Celleri, H. M. ; Castez, M. F. ; Serebrinsky, S. ; Sánchez, M. ; Álvarez, J. P. ; Winograd, E. A. ; Vitolo, M.</i>	

Hydraulic Fracture Propagation Velocity and Implications for Hydraulic Fracture Diagnostics	2048
<i>Tinni, A. ; Sondergeld, C. ; Chandra, R.</i>	
Hydraulic Fracture Swarms and Irregular Stress Shadows	2055
<i>Busetti, S.</i>	
Hydraulic Fracturing with Variable Injection Rate in Layered Tight Formations Monitored by Acoustic Emission	2065
<i>Li, N. ; Ma, X. F. ; Zhang, S. C. ; Zou, Y. S. ; Wu, S. ; Li, S. H.</i>	
Hydro-Mechanic Behavior of Synthetic Carbonate Rocks Subjected to Injection of a Reactive Fluid	2072
<i>Galindo, K. B. T. ; Lima, A. ; Guimarães, L. J. N. ; Silva, K. C. L. ; Lins, C. M. M. S.</i>	
Hydromechanical and Thermal Characterization of the Induced Hydraulic Fracture in Horstberg Geothermal Reservoir	2080
<i>Hassanzadegan, Alireza ; Tischner, Torsten</i>	
Hydro-Mechanical Modeling of Internal Erosion in Dike	2087
<i>Yang, Jie ; Laouafa, Farid ; Yin, Zhen-Yu ; Hicher, Pierre-Yves</i>	
Hydro-Mechanical Modelling of Naturally Fractured Reservoirs	2094
<i>Mejia Sanchez, E. C. ; Quevedo, R. ; Roehl, D.</i>	
Identification of Critical Factors Contributing to Increased Demand on Ground Support Elements at LaRonde Mine	2101
<i>Sasseville, G. ; Grenon, M. ; Morissette, P.</i>	
Impact of Mineralogy on Creep Properties and Production Decline Rates	2111
<i>Slim, M. ; Hofmann, R. ; Saxena, N. ; Zhai, Z. ; Hows, A. M.</i>	
Impact of Petrophysical Heterogeneity on Hydraulic and Mechanical Responses of Ultra-Heavy Oil Sand Reservoirs Under Micro-Fracturing	2118
<i>Chen, S. ; Wang, Q. Q. ; Pan, J. J. ; You, H. J. ; Huang, Y. ; Lin, B. T. ; Sheng, M.</i>	
Impact of Rock Falls on Inhabited Areas	2125
<i>Barla, Giovanni</i>	
Impacts of Stress-Level Dependency of Mudrock Mechanical Behavior on the Pore Pressure and Structural Style of Critical Tapers	2134
<i>Heidari, M. ; Nikolinakou, M. A. ; Flemings, P. B. ; Hudec, M. R.</i>	
Implementing Spatial Variance and Investigating the Effect on the Stability of a Mine Entry Roof in a Longwall Coal Mine	2142
<i>Gao, Danqing ; Mishra, Brijes ; Xue, Yuting</i>	
The Implications of Using Anisotropic Elasticity and Fully-Triaxial Failure Criteria for Borehole Stability Analysis in Shales	2148
<i>Setiawan, N. B. ; Zimmerman, R. W.</i>	
Improving Wellbore Strengthening Property of Water-Based Drilling Fluid by Addition of Barite Nanoparticles	2154
<i>Akhtarmanesh, S. ; Hareland, G. Jr. ; Hareland, G. ; Nygaard, R.</i>	
Incidence of Saturation and Fabric on the Physical and Mechanical Behaviour of Soft Carbonate Rocks	2161
<i>Andriani, G. F. ; Lollino, P. ; Perrotti, M. ; Fazio, N. L.</i>	
Inclined Fractures and Branches Induced by Supercritical CO₂: Laboratory Study	2166
<i>Zhou, Dawei ; Zhang, Guangqing ; Wang, Pu ; Wu, Wenrui</i>	
Incorporating DFN Analysis in Rock Engineering Systems Blast Fragmentation Models	2174
<i>Junkin, W. R. ; Ben-Avuah, E. ; Fava, L.</i>	
Incorporating Veined Rock Mass Characteristics into Engineering Design and Caving	2183
<i>Bewick, R. P. ; Campbell, R. ; Brzovic, A. ; Schwarz, A. ; Pierce, M.</i>	
Indentation Based Method to Determine the Mechanical Properties of Randomly Oriented Rock Cuttings	2193
<i>Martogi, D. ; Abedi, S.</i>	
Inferring Current Day and Paleo Stress Orientation from Natural Fracture Geometry	2201
<i>Likrama, F. ; Ouriri, F. ; Bouarfetine, D. ; Hammoudi, A. ; Ouargli, A. ; Iddir, M.</i>	
Influence of Flaw Geometry on Crack Coalescence Across a Frictional Interface in a Rock Model Material	2210
<i>De Melo Moura, D. ; Bobet, A.</i>	
Influence of Fracture Roughness on Shear Strength, Slip Stability and Permeability: A Micro Mechanistic Analysis by 3D Digital Rock Physics	2218
<i>Wang, Chaoyi ; Elsworth, Derek ; Fang, Yi ; Zhang, Fengshou</i>	
Influence of Horizontal Bedding on Vertical Extension of Hydraulic Fracture and Stimulation Performance in Shale Reservoir	2227
<i>Nailing, Xiu ; Yun, Xu ; Yuzhong, Yan ; Xin, Wang ; Tiancheng, Liang ; Haifeng, Fu ; Yongjun, Lu</i>	

Influence of Hydrate Decomposition on the Stability of Submarine Slope in Shenhu Area, South China Sea	2233
<i>Song, Benjian ; Cheng, Yuanfang ; Yan, Chuanliang ; Han, Zhongying ; Li, Qingchao</i>	
Influence of Longwall Mining on the Stability of Shale Gas Wells in Barrier Pillars	2247
<i>Zhang, Peter ; Su, Daniel ; Lu, Jun</i>	
Influence of Microwave Irradiation Distance on Electromagnetism, Temperature and Stress Field in Rock	2256
<i>Zhang, Z. Q. ; Liu, D. L. ; Zou, G. Q. ; Chen, F. F.</i>	
The Influence of Parameter Characterization and Scale Effects on Tunnel Inflow Estimates	2265
<i>Carney, Matthew C. ; Waterman, Matthew K.</i>	
Influences of Microstructure Changes on the Permeability of Simulated and 3D Printed Rock Masses	2272
<i>Demuro, J. ; Kim, S. ; Zhu, C.</i>	
Insights From Sensitivity Analysis of Geomechanical Modelling of a Salt Structure Offshore West Africa	2280
<i>Hoogvorst, J. J. ; Harrold, T. D. ; Nikolinakou, M. A. ; Fernández, O. ; Marcuello, A.</i>	
In-Situ Acoustic Emission Monitoring in Mines	2288
<i>Manthei, G. ; Plenkers, K. ; Philipp, J. ; Naoi, M. ; Moriya, H. ; Nakatani, M.</i>	
In-Situ Stress Measuring Technology Based on Borehole Shape and Case Study	2295
<i>Han, Zengqiang ; Wang, Chuanying ; Wang, Yiteng ; Wang, Chao</i>	
Integrating Complex Fracture Modeling and EDFM to Optimize Well Spacing in Shale Oil Reservoirs	2302
<i>Wu, Kan ; Yu, Wei ; Miao, Jijun</i>	
Integration of Fine-Scale, Plug, and Well-Log Geomechanical Properties	2310
<i>Hampton, J. ; Boitcott, G.</i>	
Integration of geophysics, geomechanics and hydrodynamics to characterize induced seismicity triggered by hydraulic fracturing in the Duvernay Reservoir near Fox Creek, Alberta	2319
<i>Hui, Gang ; Chen, Shengnan ; Chen, Zhangxing ; Gu, Fei</i>	
Intelligent Data-Driven Analytics to Predict Shear Wave Velocity in Carbonate Formations: Comparison Between Recurrent and Conventional Neural Networks	2325
<i>Alkinani, H. H. ; Al-Hameedi, A. T. ; Dunn-Norman, S. ; Flori, R. E. ; Al-Alwani, M. A. ; Mutar, R. A.</i>	

VOLUME 4

Interpreting Inter-Well Poroelastic Pressure Transient Data: An Analytical Approach	2334
<i>Manchanda, R. ; Elliott, B. ; Seth, P. ; Sharma, M. M.</i>	
Introduction and Application of the Dynamic Impact Tester	2346
<i>Berghorst, A. ; Knox, G.</i>	
Investigating Effects of Thermal Shock Technique on Unconventional Reservoir Rock Mechanical Properties	2353
<i>Elwegaa, Khalid ; Emadi, Hossein ; Ramezani, Mahdi</i>	
Investigating the Factors Controlling Intact Rock Damage Mechanisms in Jointed Pillars	2361
<i>Sharif, Ladan Karimi ; Elmo, Davide ; Stead, Doug</i>	
Investigation for Channel Fracturing Based on Coupled Implementation of Lattice Boltzmann Method and Constitutive Model of Proppant Pillar	2371
<i>Haiyan, Zhu ; Zhang, Minghai ; Liu, Qingyou ; Lei, Zhengdong ; Huang, Bo ; Zhang, Quansheng ; Chen, Yong ; Zhang, Liaoqun</i>	
Investigation of Interface Cementation Failure Mechanism Under Downhole Mechanical-Chemical Condition	2386
<i>Wang, Kongyang ; Yan, Wei ; Deng, Jingen ; Li, Lei ; Li, Wenbo ; Tian, Hao ; Xie, Shiyuan ; Xie, Shaoai</i>	
Investigation of Rock Mass Stability for a Large Tunnel Crossing Faulted Zone: From Mechanical Tests to Numerical Simulation	2392
<i>Zhang, Yuting ; Ding, Xiuli ; Huang, Shuling ; Liu, Dengxue</i>	
Investigation of Rockburst in Deep Underground Mines, a Case Study of Mfulira Mine, Copperbelt, Zambia	2403
<i>Sinkala, P. ; Nishihara, M. ; Fujii, Y. ; Fukuda, D. ; Kodama, J. ; Chanda, E.</i>	
Investigation of Super-Critical CO₂ Effect on Fracture Toughness of Tight Sandstone Containing Weak Planes	2413
<i>Kuangsheng, Zhang ; Yanjun, Zhang ; Tongwu, Zhang ; Xiaohu, Bai ; Shun, Liu ; Guangqing, Zhang ; Yuanxun, Nie</i>	
Investigation of the Rock Strength Anisotropy on the Wellbore Stability Analysis	2419
<i>Ahmed, A. Alsubaih ; Hayfaa, L. Swadi ; Nuhad, Alkanaani ; Erfan, M. Al Lawe ; Ahmed, I. Aljarah ; Swadi, Madhi ; Tariq, K. Khamees</i>	

Investigations on Thermally-Induced and Gas-Pressure Driven Fractures in Rock Salt	2429
<i>Siemann, L. ; Leuger, B. ; Zapf, D.</i>	
Isotropic Versus Anisotropic Stress Field Effects on Hydraulic Fracture Mechanisms in Opalinus Shale	2435
<i>Aldajani, O. A. ; Germaine, J. T. ; Einstein, H. H.</i>	
Joint-Enriched Finite Element Modeling of Fault Slip Under Fluid Injection in Reservoir Faults	2444
<i>Zeppilli, D. ; Zhu, C. ; Pouya, A.</i>	
Kinematic Analysis of Rock Slopes Using Photogrammetry From a Small Unmanned Aerial Vehicle (sUAV)	2454
<i>Zorn, E. V. ; Zorn, A. V. ; Kutschke, W. G.</i>	
Kinematic Rock Slope Stability Near Major Facilities	2461
<i>Dershowitz, W. ; Hosseinpour, H. ; Rogers, S.</i>	
A Laboratory and Numerical Investigation of Flawed Rock-Like Plates in Compression	2470
<i>Lotidis, M. A. ; Mytilinaiou, D. E. ; Nomikos, P. P. ; Sofianos, A. I.</i>	
Laboratory In-Situ Visualization of Long-Term Fracture Closure and Proppant Embedment in Brittle and Ductile Shale Samples	2475
<i>Nakagawa, S. ; Borglin, S. E.</i>	
A Laboratory Investigation of the Effect of Bedding Plane Inclination Angle on Hydro-Fracturing Breakdown Pressure in Stratified Rocks	2483
<i>Hadei, M. R. ; Veiskarami, A. ; Sherizadeh, T. ; Sunkpal, M.</i>	
Laboratory Investigation on Freezing-Assisted Fracturing of Coal Seam	2488
<i>Fan, Z. Y. ; Zhang, G. Q. ; Zhang, T. W. ; Zheng, X. L.</i>	
Laboratory Stick-Slip Events Due to Direct Fluid Injection	2494
<i>Cebry, S. B. L. ; McLaskey, G. C.</i>	
Laboratory Study and Numerical Simulation of Mechanism of Failure on Hydraulic Fracturing in Unconsolidated Sandstones	2501
<i>Palencia Yrausquin, E. ; Liu, W. ; Zhou, B. ; Kamgue Lenwoue, A. R.</i>	
Laboratory Study of Hydraulic Fracturing Behavior of Weakly-Consolidated Sediments Under True-Triaxial Stress Regimes	2515
<i>Gwaba, D. C. ; Germanovich, L. N. ; Hurt, R. S. ; Ayoub, J. ; Stanchits, S.</i>	
Laboratory Study on Sand Production in Moderately Consolidated Sandstones	2527
<i>Liu, X. G. ; Ma, Y. W. ; Liu, B. S. ; Li, Z. H. ; Yan, X. J. ; Liu, W.</i>	
Lab-Scale Experiments Investigating the Possibility of Bedding Plane Slip Events During Microseismic Monitoring of Hydraulic Fracturing	2536
<i>Hu, Lianbo ; Ghassemi, Ahmad ; Riley, Spencer ; Kahn, Dan</i>	
Lattice Simulation of Fracture Propagation in the Bakken Formation	2542
<i>Badrouchi, F. ; Wan, X. ; Bouchakour, I. ; Akash, O. ; Rasouli, V. ; Damjanac, B.</i>	
Lattice Simulations of Hydraulic Fracture Reorientation from Perforations	2548
<i>Akash, O. ; Vamegh, R. ; Djabelkhir, N. ; Badrouchi, F. ; Damjanac, B. ; Zhang, F.</i>	
Length-to-Diameter Ratio (L/D) of Rotary Sidewall Cores and Its Implications for Estimating Compressive Strengths (UCS or CCS) in Petroleum Geomechanics	2555
<i>Prasad, U. ; Moronkeji, D. A. ; Shouse, R. ; Funes, D. A. ; Wolfe, C.</i>	
Leveraging Return of Experience to Improve the Success Rate of Formation Stress Tests: A Case Study in the Gulf of Mexico	2563
<i>Bérard, T. ; Mishra, V. K. ; Cedillo, G. ; Pineda, W. ; Chugunov, N. ; Prioul, R.</i>	
Linearized Predictor Method for the Efficient Iterative Solution of Coupled Geomechanics – Fracture Flow Problems	2574
<i>Zheng, Shuang ; Manchanda, Ripudaman ; Shrivastava, Kaustubh ; Sharma, Mukul M.</i>	
Lithological Classification of Limestones With Self-Organizing Maps	2581
<i>Isleyen, E. ; Demirkan, D. C. ; Duzgun, H. S. ; Rostami, J.</i>	
Lithology Determination from Drilling Data Using Artificial Neural Network	2588
<i>Al-Khdheewi, Emad A. ; Mahdi, Doaa Saleh ; Feng, Runhua</i>	
Load-Bearing Behaviour of Steel Casing as Well as Annulus Cementation Regarding Salt Cavern Wells Subjected to Long-Term Operation – A Contribution to Integrity Analysis	2593
<i>Lux, K. H. ; Wolters, R. ; Pan, T. J.</i>	
Long-Term Deformation and Stability Analysis of Underground Gas Storage Caverns in Salt Rock	2602
<i>Deng, J. Q. ; Liu, Y. R. ; Yang, Q. ; Cui, W. ; Zhu, Y. B. ; Liu, Y. ; Zhang, G. X.</i>	
Long-Term Permeability Experiments of a Single Fracture in Granite Under Thermal Conditions and Evaluation of the Aperture Distribution Through Microfocus X-Ray CT	2612
<i>Song, C. L. ; Nakashima, S. ; Yasuhara, H. ; Iseki, K. ; Kishida, K.</i>	
Longwall Gateroad Yield Pillar Response and Model Verification – A Case Study	2618
<i>Klemetti, T. M. ; Van Dyke, M. A. ; Compton, C. S. ; Tulu, I. B. ; Tuncay, D. ; Wickline, J.</i>	

Lost Circulations Due to Fault Reactivation and the Implications on Stress Characterization	2630
<i>Chan, A. W. ; Brem, A. G. ; Abd Rahim, M. H.</i>	
Making Sense of It All – Characterizing Deceiving Rock Masses	2640
<i>Badner, D. ; Griffiths, C. ; Tasse, E. ; Bewick, R. P. ; Yohana, V. ; Mardiansyah, F. ; Kriska, B. ; Fajar, J.</i>	
Measuring Pressure Dependent Permeability in Shales: Impact of Stress Path and Anisotropy	2649
<i>Crawford, B. R. ; Freysteinson, J. A. ; Gupta, G. ; Homburg, J. M. ; Lonnes, S.</i>	
Mechanical and Geophysical Monitoring of Slip Along Frictional Discontinuities	2660
<i>El Fil, H. ; Bobet, A. ; Pyrak-Nolte, L. J.</i>	
The Mechanism of Fracture Initiation in Shale Rocks: Pottsville Cap-Rock-Shale vs. Marcellus Unconventional Reservoir-Shale	2668
<i>Du, Hui ; Radonjic, Mileva</i>	
A Mechanistic Model for Thermal Spallation of Geological Materials	2677
<i>Seagraves, A. N.</i>	
Methane Pore Pressure Depletion Experiments on Coal Seam Gas Reservoir Rock	2686
<i>Dudley, J. W. ; Deviney, D. B. ; Rai, U. B. ; Hol, S. ; Hummel, N. ; Sutton, H. ; Gear, I.</i>	
Method for Estimating Permeability in Carbonate Reservoirs From Typical Logging Parameters Using Functional Network	2693
<i>Tariq, Zeeshan ; Mahmoud, Mohamed ; Abdulraheem, Abdulazeez</i>	
A Methodology to Measure Fracture Aperture Using a Consumer Grade Digital Camera	2699
<i>Villamor, Lora R. ; Li, B. Q. ; Einstein, H. H.</i>	
Microearthquake Enhanced Permeability Imaging of a Stimulated Well	2709
<i>Riffault, J. ; Dempsey, D. ; Archer, R.</i>	
Micromechanical and Homogenization Modelling for a Hydrating Oilwell Cement Paste	2722
<i>Agofack, N.</i>	
A Micromorphic Critical State Plasticity Model for Capturing the Size-Dependent Anisotropic Effect of Shale, Clay, and Mudstone	2731
<i>Bryant, E. C. ; Sun, W.</i>	
Micropore Volume Modification for Coal Using Non-Contaminating Cryogenic Liquid Nitrogen and Its Impact on Sorption and Diffusion Behaviors	2737
<i>Yanga, Yun ; Liua, Shimin</i>	
Microscale Pore Characterization of Bakken Formation	2747
<i>Onwumelu, Chioma ; Nordeng, Stephan ; Adeyilola, Adedoyin ; Nwachukwu, Francis ; Azenkeng, Alexander ; Smith, Steven</i>	
Microstructural Comparison of the Impact of Drilling Fluids Contamination and Casing Corrosion on Wellbore Cement Barriers	2757
<i>Li, Y. ; Radonjic, Mileva</i>	
Microstructure Interpretation of the Effects of Carbon Nanotubes on Mechanical Properties of Rocks and on Natural Fracturing Disturbance Enhancement	2765
<i>Zhang, G. Q. ; Lin, Y. ; Nie, Y. X. ; Zhao, B.</i>	
Mine Plan Optimization with Effective Use of Pit Slope Horizontal Drains	2771
<i>Lloyd-Mills, Frank ; Dowling, Jeremy</i>	
Minimizing Lost Circulation Non-Productive Time for Naturally Fractured Formations	2782
<i>Alkinani, H. H. ; Al-Hameedi, A. T. ; Dunn-Norman, S. ; Flori, R. E. ; Al-Alwani, M. A.</i>	
Minimum In Situ Stress and Fracture Propagation Pressure Data Acquisition in Brazilian Pre-Salt Environment	2794
<i>Azevedo, C. T. ; Neumann, L. F. ; Medeiros, I. S. ; Pereira, L. C.</i>	
Mining Between Graphite Schist and Variable Quality Backfill	2800
<i>Py, A. ; Falmagne, V.</i>	
Modeling Anisotropy of Sorptive Unconventional Rocks	2807
<i>Saurabh, S. ; Harpalani, S.</i>	
Modeling Fluid Flow in Biogenic Gas Reservoirs Using Imaging Approaches	2814
<i>Pandey, R. ; Harpalani, S.</i>	
Modeling of Anisotropic Sorption-Induced Coal Deformations	2822
<i>Liu, Ang ; Liu, Shimin</i>	
Modeling of Brittle Failure Based on a Hoek & Brown Yield Criterion: Parametric Studies and Constitutive Validation	2832
<i>Marinelli, F. ; Zalamea, N. ; Vilhar, G. ; Brasile, S. ; Cammarata, G. ; Brinkgreve, R.</i>	
Modeling of in Situ Stresses in a Shale Gas Reservoir Embedded with Finite Fault Networks Considering Formation Heterogeneity	2840
<i>Gao, Yanfang ; Chen, Mian ; Hou, Bing ; Lin, Botao ; Zhang, Kunpeng ; Pang, Huiwen ; Wang, Wenzhi</i>	

Modeling of Plate Impact Experiments in Westerly Granite Using the Combined Finite-Discrete Element Method	2852
<i>Chau, V. ; Rougier, E. ; Lei, Z. ; Knight, E. ; Gao, K. ; Hunter, A. ; Srinivasan, G. ; Viswanathan, H.</i>	
Modeling of Waterless Stimulation with Multiple Energetic Sources: Parametric Study for Experiment Design	2857
<i>Vorobiev, O. Y. ; Morris, J. P. ; Grubelich, M. C.</i>	
Modeling Permeability and Fluid Flow Through Packed Particles: From a Unitary System to Binary Mixture	2863
<i>Huang, J. ; Omer, M. ; Fragachan, F. E.</i>	
Modeling Rock Bolt Behavior by Using the Interface Model of DEM	2875
<i>Weng, Meng-Chia ; Chiu, Chia-Chi ; Jeng, Fu-Shu ; Lin, Yu-Cheng</i>	
Modeling the Impact of Interfaces in a Layered Rock on Fracture Propagation and Resulting Height	2883
<i>Hammerquist, C. Chad ; Nairn, John A. ; Aimene, Yamina ; Ouenes, Ahmed</i>	
Modeling the Response of Reinforcement Elements During Dynamic Loading	2891
<i>Marulanda, Y. ; Vallejos, J.</i>	
Modifications to the Testing Equipment and Encapsulation Methodology for Direct Shear Testing of Rock Joints	2898
<i>Stilwell, I. R. ; Billings, M. A. ; Schmidt, E. S.</i>	
Monitoring Laboratory Hydraulic Fractures in Pre-Fractured Shale Using High-Resolution Optical and Neutron Imaging Techniques	2906
<i>Roshankhah, S. ; Rubino, V. ; Marshall, J. P. ; Rosakis, A. J. ; Andrade, J. E. ; Tengattini, A. ; Ando, E. ; Viggiani, G.</i>	
A Multi-Phase-Field/polycrystal Plasticity for Rock Salt: Micromorphic Regularized Grain-Boundary Slip	2914
<i>Na, S. H. ; Sun, W. C.,</i>	
A Multi-Physics Model for Low Salinity Water Injection to Improve Oil Recovery in Liquid-Rich Shale Formations	2920
<i>Bui, Binh T. ; Tutuncu, Azra N.</i>	
Multiple-Panel Longwall Top Coal Caving Induced Microseismicity: Monitoring and Development of a Statistical Forecasting Model for Hazardous Microseismicity	2935
<i>Cao, W. ; Durucan, S. ; Cai, W. ; Shi, J. Q. ; Korre, A.</i>	
Multiscale Geomechanical Analysis of the Hydraulic Fracturing Test Site	2945
<i>Morris, J. P. ; Sherman, C. S. ; Fu, P. ; Settgast, R. R. ; Huang, J. ; Fu, W. ; Wu, H. ; Hao, Y. ; Ryerson, F. J.</i>	
Multiscale Rock-Physics Modeling of Effective Elastic Properties of Fractured Reservoir Rocks	2951
<i>Bayuk, I. O. ; Dubinya, N. V. ; Garagash, I. A. ; Tikhotskiy, S. A. ; Tikhotskaya, O. A.</i>	
Nanoscale Coal Deformation and Its Geomechanics Effect on Pore Structure Evolution Under Hydrostatic and Uniaxial Compression Conditions	2960
<i>Zhang, Rui ; Liu, Shimin</i>	
Narrow Versus Wide Fairway Fracture Geometry	2971
<i>Qiu, Dezhi ; Vamegh, Rasouli ; Danjanac, Branko ; Wan, Xincheng</i>	
Nature's Solution to Wellbore Gas-Leakage: Gilsonite	2978
<i>William, B. ; Daniel, V. ; Radonjic, Mileva</i>	
A New Abutment Angle Equation for Deep Cover Coal Mines	2987
<i>Tuncay, D. ; Tulu, I. B. ; Klemetti, T.</i>	
New Acoustic Emission Parameters for Hydraulic Fracture Network Description Based on Shear-Tensile Crack Model	2994
<i>Shan, W. ; Tiantai, L. ; Hongkui, G. ; Xiaoqiong, W. ; Ning, L. ; Yueyue, S.</i>	
New Concept for the Stress Analysis on Rock Burst Failure Based on Modified Mohr's Stress Circle Representation	3001
<i>Gong, Weili ; Gao, Xia ; E Sousa, L. Ribeiro ; He, Manchao</i>	
New Contributions to Intact Rock Strength Through Automated Triaxial Testing	3010
<i>Venter, J. ; Hamman, E. C. F. ; Purvis, C.</i>	
A New Experimental Approach for Hydraulic Fracturing Fluid Optimization: Especially Focus on the Ultra-Deep Tight Gas Formation	3017
<i>Li, Hui ; Li, Ben ; Zhou, Fujian ; Zhang, Donghang ; Zhang, Yang ; Xian, Bo ; Xue, Yangpeng</i>	
New Global Correlations to Assess Depletion-Induced Compaction of Progressively-Buried Sandstone	3023
<i>Hol, S. ; Dudley, J. W. ; Van Der Linden, A. J.</i>	
A New Laboratory to Undertake Climatically Controlled Static Loading and Constant Strain Tests: Design and Preliminary Results	3028
<i>Li, Y. ; Leith, K. ; Moradian, O. ; Loew, S. ; Perras, M. A.</i>	
A New Method for Reservoir Fracture Characterization and Modeling Using Surface Analog	3034
<i>Djezzar, Softiane ; Rasouli, Vamegh ; Boualam, Aldjia ; Rabiei, Minou</i>	

A New Method of Anti-Collision While Drilling Based on Radial Gradient Measurement	3043
<i>Zhang, Sen ; Diao, Binbin ; Gao, Deli</i>	
A New Radar-Based Method for Detecting and Tracking Rockfall in Open-Pit Mines and Transportation Corridors	3050
<i>Michellini, A. ; Viviani, F. ; Leoni, L. ; Coli, N. ; Thomson, C. ; Van Rensburg, D. ; Stopka, C. J.</i>	
New Technologies for Time-Dependent Failure Modeling of Discontinuities in Rock Containing Intact Rock Bridges	3056
<i>Chun, K. H. ; Kemeny, John</i>	
Notch Driven Hydraulic Fracturing in Open Hole Completions: Numerical Simulations of Lab Experiments	3064
<i>Djabelkhir, Nejma ; Song, Xueling ; Wan, Xincheng ; Akash, Omar ; Rasouli, Vamegh ; Damjanac, Branko</i>	
A Novel Approach of Stress Dependent Permeability Modeling of Nanoporous Rocks	3070
<i>Suman, Saurabh</i>	
A Novel Diamond Hybrid Bit Improved Performance in Hard and Abrasive Formations	3082
<i>Yu, J. P. ; Zou, D. Y. ; Liu, X. A.</i>	
A Novel Enriched Galerkin Method for Modelling Coupled Mechanical Deformation in Heterogeneous Porous Media	3088
<i>Kadeethum, T. ; Nick, H. M. ; Lee, S. ; Richardson, C. N. ; Salimzadeh, S. ; Ballarin, F.</i>	
A Novel Hydraulic Fracturing Method and Case Study Based on Proppant Settlement Transport Model	3098
<i>Lu, C. ; Ma, L. ; Zhang, T. ; Guo, J. C. ; Feng, Q. ; Li, M. ; Huang, B.</i>	
Novel Methodology to Reduce the Strength of High Stress-Tight Gas Reservoirs Using Thermochemical	3105
<i>Al-Nakhli, Ayman ; Bataweel, Mohammed ; Mustafa, Ayyaz ; Tariq, Zeeshan ; Mahmoud, Mohamed ; Abdulrahim, Abdulazeez</i>	

VOLUME 5

Novel True Triaxial Apparatus Applied to the Study of Thermal Effects on Water Injectivity Under Anisotropic Stress Conditions	3114
<i>Walle, L. E. ; Berntsen, A. N. ; Bauer, A.</i>	
Novel Wellbore Failure Geometry Evolution and Stabilization Model for Shale Formations	3119
<i>Tan, C. P. ; Teng, G. E. ; Kamaruddin, N. M. F. ; Musa, I. H. ; Maung, M. M. T. ; Mohamad-Hussein, A. ; Ni, Q. ; Minton, J.</i>	
Numerical Analysis of Internal Stability of Granular Geomaterials Against a Washout Driven by Fluid Flow	3129
<i>Kim, H. M. ; Hwang, I. T. ; Ryu, D. W.</i>	
Numerical Analysis of Sand Production in Heavy Oil Thermal Recovery Wells Considering Thermal-Hydro-Mechanical Coupling	3135
<i>Deng, Fucheng ; He, Liang ; Wang, Lihua ; Sun, Dongzheng</i>	
Numerical Analysis of Wellbore Integrity and Cement Sheath Debonding for Wells in the Eugene Island OPD, Gulf of Mexico	3144
<i>Wise, J. ; Nygaard, R. ; Hareland, G.</i>	
A Numerical Approach to Upgrade the Estimation of Gas Diffusion Coefficient in Coal Matrix	3152
<i>Liu, Peng ; Yin, Guangzhi ; Liu, Shimin</i>	
Numerical Finite Element Modeling of Stress Changes Due to Clusters Array on Unconventional Shale Reservoir	3167
<i>Merchán, V. ; Acosta, M. ; Teran, C.</i>	
Numerical Investigation of 2D Non-Planar Hydraulic Fracture Propagation Behaviors Influenced by Pre-Existing Fractured and Unfractured Wells	3172
<i>Gao, Qi ; Cheng, Yuanfang ; Han, Songcai ; Li, Yang ; Yan, Chuanliang ; Han, Zhongying ; Wei, Jia</i>	
Numerical Investigation of Hydraulic Fracturing and Well Placement in Multilayered Shale Oil Reservoirs Using RFPA-Petrol	3182
<i>Li, T. ; Rutqvist, J. ; Hu, M. ; Li, L. ; Tang, C. ; Zhang, Q. ; Li, A.</i>	
Numerical Investigation of Micromechanisms of Thermal Strengthening in Rock	3191
<i>Wong, L. N. Y. ; Zhang, Y. H.</i>	
A Numerical Investigation on Geomechanical Responses of a Pilot-Scale CO₂ Storage Site, South Korea	3198
<i>Yoon, Sangcheol ; Lee, Hikweon ; Kim, Jihoon ; Shinn, Young Jae</i>	
Numerical Investigation on Installation Process of Displacement Pile	3206
<i>Duan, N. ; Lu, Y. ; Cheng, Y. P.</i>	

Numerical Model Validation and Analysis of a Dipping Limestone Pillar Using FLAC3D	3210
<i>Sears, M. M. ; Slaker, B. ; Rashed, G. ; Winfield, J.</i>	
Numerical Modeling Aspects of Fluid-driven Interface Debonding after Wellbore Plugging and Abandonment	3218
<i>Asala, H. I. ; Gupta, I.</i>	
Numerical Modeling of Evolving Discontinuities in Rocks Using Solid Interface Finite Elements	3231
<i>Maedo, M. A. ; Sánchez, M. ; Manzoli, O. ; Cleto, P. R. ; Guimarães, L.</i>	
Numerical Modeling of Indirect Hydraulic Fracturing in Coalbed Methane Reservoir	3239
<i>Wang, P. F. ; Liu, W. ; Deng, J. G.</i>	
Numerical Modeling of Well Interference Across Formations at the Hydraulic Fracturing Test Site	3246
<i>Huang, J. ; Fu, P. ; Morris, J. P. ; Settgest, R. R. ; Sherman, C. S. ; Hao, Y. ; Ryerson, F. J.</i>	
Numerical Modeling of Wellbore Stability and Sand Production of Heavy Oil Reservoir With Cyclic Steam Stimulation	3255
<i>Xu, J. ; Deng, J. G. ; Lin, H. ; Chen, Y. ; Jia, L. X. ; Liu, W.</i>	
Numerical Modelling of the Influence of In-Situ Stress, Rock Strength and Hole-Profile Geometry on the Stability of Radial Water Jet Drill (RJD) Boreholes	3265
<i>Latham, J-P. ; Farsi, A. ; Xiang, J. ; Clark, E. ; Bakker, R. R.</i>	
Numerical Simulation of CO₂ Injection in Shale Gas Reservoir Considering Adsorption-Desorption	3273
<i>Zhang, Le ; Zhou, Fujian ; Wang, Jie ; Yao, Erdong</i>	
Numerical Simulation of Gas Migration in Low-Permeable Rocks Using Morpho-Mathematical Operations – Water Drainage and Imbibition	3279
<i>Zhang, X. ; Duveau, G. ; Colliat, J. B.</i>	
Numerical Simulation of Integrated Hydraulic Fracturing, Production and Refracturing Treatments in the Bakken Formation	3286
<i>Wan, X. ; Rasouli, V. ; Damjanac, B. ; Torres, M. ; Qiu, D.</i>	
Numerical Simulation of Localized Compaction Creep in Heterogeneous Porous Rock	3292
<i>Shahin, G. ; Buscarera, G.</i>	
Numerical Simulation of Rock Erosion Performance of a High-Speed Water Jet Using an Immersed Body Method	3299
<i>Xiang, J. ; Latham, J-P ; Pain, C.</i>	
Numerical Simulation of Time-Dependent Wellbore Instability in Naturally Fractured Shale Formation	3306
<i>Lin, H. ; Deng, J. G. ; Liu, W. ; Yuan, W. W. ; Xie, T.</i>	
Numerical Simulation of Wellbore Stability in Frozen Soil During Drilling Operation	3315
<i>Yang, Li. ; Chuanliang, Yan. ; Yuanfang, Cheng. ; Songcai, Han. ; Qi, Gao. ; Jia, Wei</i>	
Numerical Simulation on Hydro-Mechanical Coupling During Gas Transport in Shale	3324
<i>Wei, Shiming ; Jin, Yan ; Huang, Zhao ; Xia, Yang</i>	
Numerical Simulations of a Poroplastic Medium Considering Generalized Plastic Effective	3332
<i>Da Silva, R. O. ; Santos, E. S. R. ; Murad, M. A. ; Obregon, J. A. L.</i>	
Numerical Study on the Time-Dependent Behavior of Rock Joints	3339
<i>Xue, Yuting ; Mishra, Brijes</i>	
Of the Stress Sensitivity of Sonic Wave Velocity and the Reliability of Sonic Tools in Unconventional Tight Gas Sand Reservoirs	3346
<i>Germay, C. ; Lhomme, T. ; Camilion, E.</i>	
On the Bifurcation Behavior of RSS Steering Capabilities	3353
<i>Marck, J. ; Zalluhoglu, U.</i>	
On the Border Between Brittle and Ductile Behavior of Shale	3364
<i>Holt, R. M. ; Fjær, E. ; Larsen, I. ; Stenebråten, J. F. ; Raaen, A. M.</i>	
On the Characterization of Bakken Formation: Oscillating-Pulse, Pulse-Decay Permeability Measurement & Geomechanics	3371
<i>Assady, A. ; Jabbari, H. ; Ellafi, A. M. ; Goudarzi, B.</i>	
On the Sanding and Flow Convergence Skin in Cased and Perforated Slotted Liner Vertical Production Wells	3382
<i>Velayati, A. ; Roostaei, M. ; Sharbatian, A. ; Fattahpour, V. ; Mahmoudi, M. ; Lange, C. F. ; Nouri, A.</i>	
Operationalization of Wellbore Strengthening in the Deepwater Gulf of Mexico	3396
<i>Husain, T. M. ; Tjioe, M.</i>	
Operations Management in Seismically Active Mines	3402
<i>Beck, D. A. ; Campbell, A.</i>	
Optimized Pore Pressure and Fracture Gradient Prediction for a Highly Deviated Subsalt Well in a Depleted Reservoir	3412
<i>Li, S. ; Ricci, L. ; McKay, D. ; Mitchell, P. ; Cruz, E.</i>	

Optimizing Drawdown Program for a Miocene Field by Applying Geomechanical Modelling to Quantify Casing Integrity Risk	3416
<i>Araujo, E. ; Morley, D. ; Neutzler, C. ; Bryant, D. ; Akajagbor, C. ; Jo, H.</i>	
Overcoming Rock Engineering Challenges for Construction of Transport Tunnels in the Himalayas	3424
<i>Bhasin, R. ; Grimstad, E. ; Aarset, A. ; Malik, S.</i>	
Overcoming Subsurface and Batch Drilling Challenges in a Heavily Faulted Deepwater Environment	3431
<i>Abd Rahim, M. H. ; Chan, A. W. ; Brem, A. G. ; Seli, P. ; Khodaverdian, M. F.</i>	
Pastefill Optimisation at Hecla Québec's Casa Berardi Mine	3441
<i>Alcott, J. ; Dallaire, D. ; Belem, T.</i>	
Permeability and Deformation Mechanisms During Triaxial Testing of Early-Age Cement	3448
<i>Bauer, S. J. ; Wilson, J. ; Matteo, E. N. ; Bettin, G.</i>	
Permeability and Rigidity of Green River Shale Before and After Interaction with Water	3457
<i>Yildirim, L. T. O. ; Elsworth, D. ; Wang, J. Y.</i>	
Permeability Damage of Coal for Guar Gel Fracturing Operation	3469
<i>Huang, Qiming ; Liu, Shimin</i>	
Permeability Evolution of Limestone During Formation of Compaction Bands: A Digital Poro-Mechanics Approach	3478
<i>Chen, X. ; Roshan, H. ; Regenauer-Lieb, K.</i>	
The Petrophysical and Mechanical Properties of Oklahoma's Crystalline Basement	3485
<i>Kibikas, W. M. ; Carpenter, B. M. ; Ghassemi, A.</i>	
Physical Modelling on the Cutterhead-Block Interaction During TBM Tunneling	3494
<i>Wang, S. F. ; Zhang, Z. X. ; Huang, X.</i>	
Pillarburst Proneness Due to Large-Scale Excavations in Deep Mines (Case Study: The Provence Coal Mine)	3500
<i>Ahmed, S. ; Alheib, M. ; Gunzburger, Y. ; Renaud, V.</i>	
Plasticity and Damage Analysis of Berea Sandstone via Cyclic Triaxial Loading Under High Confinement Pressure	3507
<i>Mubarak, H. ; Saji, R. P. ; Zhu G. L. R. ; Sousa, R. L. ; Sassi, M. ; Abu Al-Rub, R. K.</i>	
Pore Pressure Response in Rock: Implications of Tensorial Skempton B in an Anisotropic Formation	3519
<i>Raaen, A. M. ; Larsen, I. ; Fjær, E. ; Holt, R. M.</i>	
Poroelastic Response of Spherical Indentation – Step Displacement Loading	3526
<i>Liu, Ming ; Huang, Haiying</i>	
A Power Function Micro-Creep Model of Salt Rock	3536
<i>Li, Huan ; Yang, Chunhe ; Huang, Shuling ; Ding, Xiuli ; Yang, Jie ; Han, Yue ; Xue, Tianfu ; Ma, Changkun</i>	
Practical Approach for Sand-Production Prediction During Production	3542
<i>Abbas, Ahmed K. ; Baker, Hussain A. ; Flori, Ralph E. ; Al-Hafadhi, Haider ; Al-Haideri, Najim</i>	
A Practical Approach to a Reliability-Based Stability Evaluation of Precariously Balanced Granite Boulders	3551
<i>Vann, J. D. ; Olaiz, A. H. ; Morgan, S. ; Zapata, C.</i>	
Predicting Elastic Properties of Geomechanical Models with Genetic Programming	3566
<i>Souza, L. M. S. ; Roehl, D.</i>	
Predicting Fracture Clusters, Cluster Spacing and Perforations of Horizontal Wells Using Data Analytics	3574
<i>Alzahabi, Ahmed ; Trindade, A. Alexandre ; Kamel, Ahmed ; Baustian, Wade</i>	
Predicting the Height of Longwall Mining Induced Connective Fracturing and Permeability Enhancement	3589
<i>Adhikary, D. P. ; Poulsen, B. A. ; Guo, H.</i>	
A Prediction Model for Extension Limit of Horizontal Drilling Based on Leakage Pressure in Carbonate Formations	3598
<i>Li, Xin ; Zhao, Quanmin ; Zhang, Jincheng ; Zeng, Yijin ; Yang, Kaigang ; Yang, Xinxiang</i>	
A Prediction Model for Fracture Pressure in Shallow Stratum of Deep Water Area	3605
<i>Wang, Xiaoming ; Chen, Junbin ; Huang, Hai ; Huang, Rui ; Jiang, Xu</i>	
Prediction of Mechanical Stability of Acidizing-Induced Wormholes Through Coupled Hydro-Chemo-Mechanical Simulation	3615
<i>Dong, Rencheng ; Wang, Qiqi ; Wheeler, Mary F.</i>	
Prediction of Temperature and Time-Dependent Nonlinear Elastic Properties of Oil Sand Under Thermal Stimulation	3622
<i>Gao, Yanfang ; Chen, Mian ; Pang, Huiwen ; Wang, Wenzhi</i>	
Prediction Technique of Coal Seam Rock Mechanical Parameters Based on the Logging Data Box Dimension	3630
<i>Danqiong, Li ; Ping, Zhang ; Hansen, Sun ; Rigui, Xia ; Lu, Cheng ; Xiangjun, Liu</i>	

Preliminary Assessment of Primary Stope Performance for a Seismically Active Mine	3641
<i>McFadyen, B. ; Grenon, M. ; Morissette, P. ; Woodward, K.</i>	
Pressure Interference Between Fractured Horizontal Wells: Impact of Complex Fracture Growth on Offset Well Pressure Measurements	3652
<i>Seth, Puneet ; Shrivastava, Kaustubh ; Kumar, Ashish ; Sharma, Mukul M.</i>	
Production Performance Estimation from Stimulation and Completion Parameters Using Machine Learning Approach in the Marcellus Shale	3662
<i>Al-Alwani, M. A. ; Britt, L. ; Dunn-Norman, S. ; Alkinani, H. H. ; Al-Hameedi, A. T. ; Al-Attar, A.</i>	
Propagation of a Planar Hydraulic Fracture Perpendicular to the Isotropy Plane of a Transversely Isotropic Material	3676
<i>Moukhtari, F. E. ; Lecampion, B. ; Zia, H.</i>	
Propagation of a Plane-Strain Hydraulic Fracture Accounting for the Presence of a Cohesive Zone and a Fluid Lag	3687
<i>Liu, D. ; Lecampion, B.</i>	
Proppant Behavior in Varying Fracture Alignments and Concentration Distributions	3696
<i>Yamashiro, B. D. ; Tomac, I.</i>	
Proppant Transport in a Propagating Hydraulic Fracture and the Evolution of Transport Properties	3705
<i>Wang, J. ; Elsworth, D. ; Denison, M. K.</i>	
Proppant Transport Studies Using Three Types of Fracture Slot Equipment	3716
<i>Kim, Jung Yong ; Jing, Ziming ; Morita, Nobuo</i>	
Puzzles in Tensile Strength Determination of Hard Rocks	3728
<i>Serati, M. ; Williams, D. J.</i>	
Quantifying the Reduction in Breakdown Pressure Based on Fluid Saturation	3733
<i>Muqtadir, A. ; Elkatatny, S. M. ; Mahmoud, M. A. ; Abdulraheem, A. ; Gomaa, A.</i>	
RAMMS::ROCKFALL - A Modern 3-Dimensional Simulation Tool Calibrated on Real World Data	3738
<i>Caviezel, A. ; Lu, G. ; Demmel, S. E. ; Ringenbach, A. ; Bühler, Y. ; Christen, M. ; Bartelt, P.</i>	
Recompletion with Consideration of Depletion Effect in Naturally Fractured Unconventional Reservoirs	3746
<i>Bai, Jie ; Sierra, Leopoldo ; Martysevich, Vladimir</i>	
Regional-Scale Implementation of Poroelastic Solutions for Subsidence Analyses	3756
<i>Lizárraga, J. J. ; Chandra, K. ; Buscama, G.</i>	
Relative Orientations Matter: Behavior of Gas Shale Reservoir with Various Orientations of Wellbore to Bedding Planes	3762
<i>Roshankhah, S. ; Mohammadi, K. ; Yu, W. ; Miao, J.</i>	
Research and Evaluation of a Novel Low Friction, High Density and High Temperature Resistance Fracturing Fluids System	3768
<i>Wang, Jie ; Yao, Erdong ; Qiu, Yunan ; Zhou, Fujian ; Wang, Zhuang ; Zhang, Le ; Wang, Rui</i>	
Research on Formation Process of SCP and Shape of Compaction Zone in Low Permeability Sandstone	3774
<i>Lin, Tiejun ; Mou, Yisheng ; Lian, Zhanghua ; Bao, Xiaomin ; Yu, Hao ; Liu, Yuxuan</i>	
Research on Hydrostatic Pressure Development of a Crack in Rapid Intrusion of High-Pressure Water Flow	3785
<i>Yang, Kaigang ; Gao, Deli</i>	
Residual Properties Estimated from Post-Peak Triaxial Unloading: Case Study of a Hard Rock Mine Site	3792
<i>Gaines, S. ; Walton, G. ; Labrie, D.</i>	
Retrospective Assessment of Structurally-Controlled Crown Pillar Failures	3802
<i>Carter, T. G.</i>	
Review of Historic Records in the Design of Kensico-Eastview Connection Tunnel	3818
<i>Temco, Z. R. ; Tsang, W.</i>	
Review of Stimulation and Completion Activities and Trends in the United States Shale Plays: Permian Basin Case Study	3826
<i>Al-Alwani, M. A. ; Britt, L. ; Dunn-Norman, S. ; Alkinani, H. H. ; Al-Hameedi, A. T. ; Al-Attar, A.</i>	
Review of the Relation Between Pillar Load and Opening Convergence in Pillar Design Using the Ground Reaction Curve Concept	3850
<i>Ray, R. ; Newman, C. ; Agioutantis, Z.</i>	
Revisiting Classical Wellbore Tensile Failure Models with Size Effects	3860
<i>Prioul, Romain ; Bérard, Thomas</i>	
Rock Engineering Design Method and Practical Application of Metal Mine in China	3868
<i>Ruijun, Zhu ; Runcang, Yu ; Haoyan, Wu. ; Junsheng, Ma. ; Xiuhua, Gu.</i>	

Rock Quality Designation 3D Modelling Using Geostatistics: A Tungsten Portuguese Deposit Case Study	3873
<i>Pinheiro, M. ; Sousa, L. ; Miranda, T. ; Pereira, E.</i>	
Rock Strength Degradation Induced by Salt Precipitation: A New Mechanical Mechanism of Sand Production in Ultra-Deep Fractured Tight Sandstone Gas Reservoirs	3880
<i>Zhang, Dujie ; Kang, Yili ; You, Lijun ; Xiangchen, Li</i>	

VOLUME 6

Rock Vibration Characteristics in Vibro-Impact Drilling Based on Fractional Derivative	3889
<i>Ji, Z. S. ; Shi, H. Z. ; Song, H. Y. ; Zhao, H. Q. ; Yang, B.</i>	
Role of Friction Reducers on Formation Fluid Flow	3899
<i>Wu, J. J.</i>	
RQD Block Modelling for the Identification of a Shear Zone at a Narrow Vein Underground Gold Mine	3906
<i>Ramires, J. E. F. ; Campos, M. P. ; Batista, G. A. P. ; Da Silva, J. H. ; Carvalho, A. S. ; Seery, J. M.</i>	
Safe Mud Weight Window Determination: A Case Study from Southern Iraq	3912
<i>Abbas, Ahmed K. ; Alhussainy, Shaban D. ; Abdul Hussien, Hassan A. ; Flori, Ralph E.</i>	
Sand Mass Production in True Triaxial Borehole Tests	3922
<i>Papamichos, E. ; Walle, L. E. ; Berntsen, A. N. ; Stenebråten, J. F.</i>	
Seismic Driven Geomechanical Studies: A Case Study in an Offshore Gas Field	3927
<i>Khatibi, Seyedalireza ; Ostadhassan, Mehdi ; Farzay, Oveis ; Aghajanpour, Azadeh</i>	
Seismic-Scale Self-Affinity of Seismogenic Subsurface Faults and Rupture Dynamics	3933
<i>Yuan, R. S. ; Wood, A. M. ; Davison, J. M.</i>	
SEM Investigation of the Fracture Network (Stimulated Reservoir Volume) Induced by Hydraulic Fracturing in Tennessee Sandstone	3940
<i>Ratzlaff, C. W. ; Sondergeld, C. H. ; Rai, C. S. ; Curtis, M. E. ; Jernigen, J. D.</i>	
Sensitivity Analysis for Bedding Rock Slope Stability Under Weathering: A Case Study	3953
<i>Liu, Dengxue ; Huang, Shuling ; Ding, Xiuli ; Zhang, Yuting</i>	
Shear Behavior of Bedded Salt Interfaces and Clay Seams	3961
<i>Sobolik, S. R. ; Buchholz, S. A. ; Keffeler, E. ; Borglum, S. ; Reedlunn, B.</i>	
Shear Dilation in Hydraulic Fracturing: Insight from Laboratory Experiment	3971
<i>Feng, Runhua ; Sarmadivaleh, Mohammad</i>	
Shear Strength Characterisation for Very-High Coal Mine Spoil Dumps: Applicability of an Industry-Accepted Framework	3977
<i>Bradfield, L. R. ; Fityus, S. G. ; Simmons, J. V.</i>	
Simulation of Buoyancy Effect on the Efficiency of Geothermal Development in Supercritical CO₂-Based EGS	3992
<i>Chen, Y. ; Ma, G. W. ; Wang, H. D. ; Li, T. ; Wang, Y.</i>	
Simulation Study on Heat Extraction in Enhanced Geothermal Reservoirs with Random Fracture Distribution	4001
<i>Han, Songcai ; Cheng, Yuanfang ; Gao, Qi ; Yan, Chuanliang ; Wei, Jia ; Zhang, Jincheng</i>	
Sinkhole Susceptibility Assessment of Underground Caves in Soft Rocks by Means of FEM-Based Charts	4016
<i>Lollino, P. ; Perrotti, M. ; Fazio, N. L. ; Parise, M.</i>	
Size Scaling and Spatial Clustering of Natural Fracture Networks Using Fractal Analysis	4023
<i>Djezzar, Sofiane ; Rasouli, Vamegh ; Boualam, Aldjia ; Rabiei, Minou</i>	
Slow-Slip Evolution of Injection-Induced Shearing on Granite Fracture	4035
<i>Sheng, M. ; Xu, Z. ; Li, P. ; Tian, S.</i>	
Sorption of CO₂ and Integrity of a Caprock Shale	4043
<i>Agofack, N. ; Cerasi, P. ; Stroisz, A. ; Rørheim, S.</i>	
Spatial-Temporal Evolution of Mining-Induced Fracture Fields in a Gas Burst-Prone Coal Seams	4052
<i>Cheng, Zhiheng ; Feng, Jicheng ; Zhao, Zhiyan ; Sun, Fulong ; Wang, Xin</i>	
Stability Analysis of an Underground Limestone Mine Using Terrestrial Laser Scanning with Stochastic Discrete Element Modeling	4061
<i>Monsalve, J. J. ; Baggett, J. G. ; Sont, A. ; Ripepi, N. ; Hazzard, J.</i>	
Stability Analysis of Circulating Gas Injection and Extraction in Jintan Salt Cavern Gas Storage	4071
<i>Zhang, Yuhao ; Ma, Hongling ; Shi, Xilin ; Li, Huan ; Yin, Hongwu ; Zhang, Shengnan</i>	
Stability Analysis of Drives Excavated in Paste-Filled Stopes for Underhand Mining	4086
<i>Soni, A. ; Naik, S. R. ; Ripepi, N.</i>	

Stability Analysis of Lunar Lava Tubes for Permanent Extraterrestrial Habitation	4094
<i>Modiriasari, A. ; Theinat, A. K. ; Melosh, H. J. ; Bobet, A.</i>	
Stability of a Rotary Drilling System with Bits Consisting of Full and Partial Blades	4102
<i>Tian, Kaixiao ; Detournay, Emmanuel</i>	
Static Proppant Settling Velocity Characteristics in High Viscosity Friction Reducers Fluids for Unconfined and Confined Fractures	4112
<i>Ba Geri, M. ; Flori, R. ; Imqam, A. ; Shen, L. ; Bogdan, A.</i>	
Stick-Slip Induced Source Ground Vibration in Sheared Granular Fault	4122
<i>Gao, K. ; Rougier, E. ; Guyer, R. A. ; Lei, Z. ; Johnson, P. A.</i>	
Stochastic Determination of Formation Parting Pressure and Dynamic Injectivity for Water Injection	4130
<i>Jing, Zhiyi ; Wu, Xingru</i>	
Stochastic Modeling of a Conservative Tracer Test for the Characterization of Fracture Flow Patterns in EGS Collab Experiment 1	4140
<i>Wu, H. ; Fu, P. ; Morris, J. P. ; Settgest, R. R. ; Ryerson, F. J. ; Mattson, E. D. ; Hawkins, A. J. ; Zhang, Y.</i>	
Stochastic Prediction of Multi-Well Fracture Connectivity and Application to EGS Collab Experiment 2	4146
<i>Frash, L. P. ; Morris, J. P. ; Egs Collab Team, _</i>	
Straddle Packer MicroFrac Testing in High Temperature Unconventional Well: A Case Study in the Bossier/Haynesville Shale	4154
<i>Franquet, J. A. ; Moronkeji, D. A. ; Morton, J.</i>	
Stress Determination from Logs. Why the Simple Uniaxial Strain Model is Physically Flawed but Still Gives Relatively Good Matches to High Quality Stress Measurements Performed on Several Fields Offsho...	4166
<i>Andrews, J. S. ; De Lesquen, C.</i>	
Stress Distribution in Ordovician Carbonate Rocks of the Tuofutai Region in the Tahe Oilfield	4177
<i>Liu, Zhiyuan ; Yan, Yujie ; Song, Zhifeng ; Mao, Haijun ; Yang, Chunhe</i>	
Stress Reduction in Bounding Shales of Depleted Unconsolidated Reservoir Sands – a Case for Shale Pore Pressure Depletion	4187
<i>Enyioha, C. ; Lin, M. ; Mikulencak, D.</i>	
Stress State Estimation Based on Local Variations of Effective Elastic Moduli Caused by Presence of Critically Stressed Fractures	4194
<i>Dubinya, N. V.</i>	
A Study of Open-Hole Extended-Reach Limit of a Horizontal Well in Natural Gas Hydrate Formation Considering the Wellbore Circulating Temperature Profile	4204
<i>Zhang, H. ; Tan, T. ; Li, J. ; Zhang, S. ; Deng, Q. ; Wang, H. ; Cai, Z. ; Yu, Q. ; Yang, M. ; Chen, Y. ; Liu, K.</i>	
Study of Plastic and Creep Deformation of Shale Rocks with a Micro-Mechanics Based Approach	4208
<i>Farhat, F. ; Xie, S. ; Shao, J. F. ; Pourpak, H. ; Su, K.</i>	
Study of Poroelastic Deformation in Soft Elastic Granular Materials During Repetitive Fluid Injection	4214
<i>Hosseini Zadeh, A. ; Jeon, M.-K. ; Kwon, T.-H. ; Kim, S.</i>	
Study of the Physico-Chemical Changes in Synthetic Carbonate Rocks Submitted to Injection of Reactive Fluids	4222
<i>Oliveira, A. D. ; Melo, L. M. ; Guimarães, L. J. ; Amorim, A. F. ; Oliveira, S. M. F. ; Gomes, I. F.</i>	
Study on Failure Features of Natural Fracture During Hydraulic Fracture Approaching	4228
<i>Han, Songcai ; Cheng, Yuanfang ; Gao, Qi ; Ding, Jiping ; Li, Yang ; Yan, Chuanliang ; Zhang, Jincheng</i>	
Study on Temperature-Time Effect Characteristics of Hard Rock Under Long-Term Load	4241
<i>Zhang, Longyun ; Yang, Shangyang</i>	
Study on the Flow Mechanism Simulation of Deep Shale Propped Fractures in Sichuan Basin	4246
<i>Lu, C. ; Huang, C. H. ; Chen, C. ; Guo, J. C. ; Xu, X. ; Feng, Q. ; Xiao, Y. J. ; Liu, W.</i>	
Study on the Influence of Conglomerate Meso-Structures Characteristics on Crack Propagation	4258
<i>Yan, Yu ; Zhang, Guangqing ; Li, Shiyuan ; Nie, Yuanxun</i>	
Study on the Open-Hole Extended-Reach Limit Model Analysis for Offshore Reelwell Drilling Method	4264
<i>Li, J. ; Tan, T. ; Zhang, H. ; Deng, Q. ; Wang, H. ; Cai, Z. ; Yu, Q. ; Yang, M. ; Chen, Y. ; Liu, K.</i>	
Subsurface Monitoring via Physics-Informed Deep Neural Network Analysis of DAS	4271
<i>Sherman, C. S. ; Mellors, R. J. ; Morris, J. P.</i>	
The Supercritical CO₂ Fracturing Experimental Study on Fracture Initiation of Different Rocks	4278
<i>Yang, Bing ; Wang, Haizhu ; Shen, Zhonghou ; Lu, Qun ; Zheng, Yong ; Shi, Lujie</i>	
Super-Critical CO₂ Weakening Effect on Strength of Tight Sandstone With a Weak Plane: Experimental Results and Causes	4296
<i>Zhang, Guangqing ; Yuanxun, Nie ; Bai, Xiaohu</i>	

Synthetic Polypropylene Fiber Content Influence on Cement Strength at High-Temperature Conditions	4303
<i>Mahmoud, Ahmed Abdulhamid ; Elkhatmy, Salaheldin</i>	
System Reduction for Fractured Media Using Machine-Learning	4308
<i>Srinivasan, S. ; Karra, S. ; Hyman, J. D. ; Viswanathan, H. S. ; Srinivasan, G.</i>	
A Systematic Approach to Correlate Experimental Stress and Damage Measures for Hard Rock	4312
<i>Bruning, T. D. ; Karakus, M. ; Nguyen, G. D. ; Goodchild, D.</i>	
Technology for Monitoring Wetting Range of True-Triaxial Coal Seam Water Injection Based on Acoustic Emission Array	4319
<i>Cheng, Weimin ; Chen, Jian ; Wang, Gang ; Fan, Jiuyuan ; Hu, Yanwei</i>	
Temperature Effects on Nano-Micro- Scale Fracture of Pure Calcium Carbonate Using Molecular Dynamics	4329
<i>Mosharafī, M. ; Mahbaz, S. B. ; Dusseault, M. B.</i>	
Tensile Behaviors of Granite: Grain Scale Cracking and Fracture Process Zone	4337
<i>Kong, Lie ; Gamage, Ranjith Pathegama ; Zhao, Jinzhou ; Rathnaweera, Tharaka ; Ma, Zhaoyang</i>	
Tensile Strength of the Interface Between Cement and Shale Caprock and the Mechanism of Strength Development	4348
<i>Stroisz, A. M. ; Gawel, K. ; Bjørge, R. ; Cerasi, P. R.</i>	
Thermodynamic-Consistent Adsorption-Swelling Models for Coal	4355
<i>Zhang, Yida</i>	
Thermomechanical Analysis of the Long-Term Barrier Integrity in Bedded Salt Formation	4362
<i>Liu, Wenting ; Eickemeier, Ralf ; Fahland, Sandra</i>	
THM Modeling of Poroelastic Sustainability of Hydraulic Fracture in CO₂ Storage Reservoirs	4369
<i>Fu, P. ; Ju, X. ; Huang, J. ; Settgest, R. R. ; Morris, J. P.</i>	
A Three Dimensional Fracability Model Integrated with Cuttings-Core-Wellbore-Reservoir Multiscal Parameters: A Case Study of a Tight Sandstone Reservoir	4375
<i>Zhu, Haiyan ; Tao, Lei ; Liu, Dongqiao ; Liu, Qingyou ; Zhang, Binhai ; Peng, Chengyong ; McLennan, John</i>	
Threshold Horizontal Stress Contrast for Fully Cemented Natural-Fracture Reactivation: Dependence on Intersection Angle and Initial Reservoir Pressure	4386
<i>Haddad, M. ; Eichhubl, P. ; Laubach, S.</i>	
Tiltmeter Monitoring to Verify Growth of Hydraulic Fractures Used for Preconditioning of Strong Roof Rock	4393
<i>Kasperczyk, D. ; Chen, Z. ; Jeffrey, R. G. ; Pandurangan, V.</i>	
Experimental Study on Shear Characteristic of Filling Rock Joints Under Constant Normal Load Conditions	4399
<i>Deng, H. ; Cao, P. ; Lin, Q.</i>	
Tracking Convergence, Spalling, and Cutter Roof Formation at the Pleasant Gap Limestone Mine Using LiDAR	4405
<i>Slaker, B. ; Murphy, M. ; Winfield, J.</i>	
Transient Effects of Leak-off and Fracture Ballooning on Mud Loss in Naturally Fractured Formations	4415
<i>Dokhani, V. ; Ma, Y. ; Li, Z. ; Geng, T. ; Yu, M.</i>	
Transient Solids Production: Analytical Approach	4424
<i>Geilikman, M. B.</i>	
Tunneling in Rock for Chicago's Albany Park Stormwater Diversion Tunnel	4432
<i>Vardakos, Sotirios ; Mark Step Hani ; Frank Jaramilla ; Hernandez, Michaelangelo</i>	
Ultrasonic Precursors to Shear Failure of Rock Joints in Gosford Sandstone with Rough Contact Surfaces	4440
<i>Gheibi, Amin ; Hedayat, Ahmadreza</i>	
Uncertainty of Fracture Intensity Measurement in Discontinuous Rock Masses – a Sampling Window Approach	4449
<i>Lu, Y. C. ; Tien, Y. M. ; Juang, C. H.</i>	
Uncertainty Quantification and Reduction Through Data Assimilation Approaches for the Geomechanical Modeling of Hydrocarbon Reservoirs	4457
<i>Gazzola, L. ; Ferronato, M. ; Frigo, M. ; Janna, C. ; Teatini, P. ; Zoccarato, C. ; Antonelli, M. ; Corradi, A. ; Dacome, M. C. ; Mantica, S.</i>	
Uncertainty Reduction in Constructing the Mechanical Earth Model Using Artificial Neural Network: Case Study from Egypt's Western Desert	4468
<i>Algarhy, A. ; Dubey, A.</i>	
Underground Ground Deformation Monitoring – A User Friendly Approach	4483
<i>Van Eck, D. R. ; Berghorst, A.</i>	

Underground Rock Dissolution and Geomechanical Issues	4489
<i>Laouafa, F. ; Guo, J. ; Quintard, M.</i>	
Understanding Non-Aqueous Phase Liquid Contaminant Leaking Into Subsurface Using FEM	4501
<i>Yu, W. ; Li, H. ; Cai, S. M. ; Wang, B.</i>	
Uniaxial Strain Unloading Compressibility of Frio Sand: Measurements and Implications on Reservoir Pressure Management for CO₂ Storage	4511
<i>Zheng, Xiaojin ; Sun, Zhuang ; Espinoza, Nicolas D.</i>	
Use of B Factor from Major Geological Faults' Orientation on Mathews' Stability Graph Method. a Case Study.	4518
<i>Azorin, J. L. ; Vallejos, J. A. ; Miranda, R. J. ; Mondaca, M. ; Garrido, C. ; Catalan, O.</i>	
Using an Analytical Model to Predict Collapse Volume During Drilling: A Case Study from Southern Iraq	4525
<i>Abbas, Ahmed K. ; Manhalawi, Asmaa ; Alameedy, Usama ; Flori, Ralph E.</i>	
Using Roughness of Excavated Rock Surface to Predict Cutting Forces: A Numerical Approach	4534
<i>Ayawah, P. E. ; Gertsch, L. S. ; Sherizadeh, T.</i>	
Utilization of Sidewall Plugs for Enhancing Rock Characterization	4543
<i>Govindarajan, S. ; Gokaraju, D. V. ; Mitra, A. ; Thombare, A. ; Guedez, A. ; Ghoneim, T. ; Patterson, R. ; Aldin, M.</i>	
The Variation of Grain Size Distribution (GSD) in the Rock Granular Matters with Mass Migration and Loss in the Seepage Process	4551
<i>Kong, Hailing ; Wang, Luzhen ; Xu, Guizhong ; Qiu, Chengchun ; Xu, Bing ; Zhang, Dan</i>	
Variation of the Least Principal Stress with Depth and Its Effect on Vertical Hydraulic Fracture Propagation During Multi-Stage Hydraulic Fracturing	4556
<i>Xu, S. ; Singh, A. ; Zoback, M. D.</i>	
Variations of the Property of High Temperature Granite Treated with Liquid Nitrogen	4563
<i>Huang, Pengpeng ; Huang, Zhongwei ; Yang, Zheqi ; Yang, Ruiyue ; Wu, Xiaoguang</i>	
Viscous Drag During Gravitational Sinking of Brittle Anhydrite Stringers in Zechstein Salt Above the Groningen Field Could Cause Minor Earthquakes	4572
<i>Li, Shiyuan ; Urai, Janos L. ; Zhang, Guangqing</i>	
Visualization Study of Hydraulic Fracture Propagation in Unconsolidated Sandstones	4578
<i>Chen, Lei ; Zhang, Guangqing ; Lyu, Yanjun ; Li, Zhaoxing ; Zheng, Xuelin</i>	
Wall-Retardation Effect on Proppant Settling Velocity in Fractures: Experimental Study and Model Development	4584
<i>Zhu, Zhaopeng ; Xu, Zhengming ; Song, Xianzhi</i>	
Well Integrity of High Temperature Wells: Effect of Mineralogical Changes on Mechanical Properties of Well Cement	4592
<i>Terhege, J. H. ; Wollenweber, J. ; Naumann, Marcel ; Pipilikaki, P. ; Vercauteren, F.</i>	
Well Track Optimization of Multi-Branch T-Shaped Well in Coal Seam	4601
<i>Meng, S. Z. ; Wu, A. A. ; Yang, G. ; Hou, B.</i>	
Wellbore Stability Analysis Using an Elasto-Plastic Mogi-Coulomb Model	4608
<i>Kamgue Lenwoue, A. R. ; Deng, J. ; Liu, W. ; Li, H. ; Palencia Yrausquin, E. ; Matamba, G.</i>	
Wellbore Stability and Possible Geomechanical Failure in the Vicinity of the Well During Pressurization at the Gas Hydrate Deposit in the Ulleung Basin	4618
<i>Kim, Jihoon ; Lee, Joo Yong</i>	
Wellbore Strengthening Analysis in Single and Multi-Fracture Models Using Finite Element and Analytical Methods, Case Study: South Pars Gas Field	4625
<i>Mehrkhani, Farzad ; Ebrahimabadi, Arash ; Alaei, Mohamad Reza</i>	
Will Using LSASF Affect the Rock Properties of Sandstone and Increase Oil Recovery?	4641
<i>Hasan, Al-Saedi N. ; Ralph, Flori E. ; Qasim, A. K.</i>	
Author Index	