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Flora F. Solon*, Sergio L. Fontes, and Jean Marie Flexor, Observatório Nacional, ON, MCT; Maxwell Meju, Petronas

EM 3.8 (0655–0659)

CSEM sensitivity study of CO₂ layers with uniform versus patchy saturation distributions

Anwar H. Bhuyian* and Martin Landrø, NTNU; Amir Ghaderi, SINTEF, NTNU

Reservoir Characterization

EM 4.1 (0660–0665)

Inversion of porosity and fluid saturations from joint electromagnetic and elastic full-waveform data

G. Gao, A. Abubakar, and T. M. Habashy, Schlumberger-Doll Research

EM 4.2 (0666–0670)

3D inversion of time-lapse CSEM data based on dynamic reservoir simulations of the Harding field, North Sea

Noel Black* and Glenn A. Wilson, Technolmaging; Alexander V. Gribenko and Michael S. Zhdanov, University of Utah, Technolmaging; Ed Morris, PGS

EM 4.3 (0671–0676)

Production monitoring using joint inversion of marine controlled-source electromagnetic data and production data

L. Liang*, A. Abubakar, and T. M. Habashy, Schlumberger-Doll Research

EM 4.4 (0677–0681)

High-frequency induced polarization measurements of hydrocarbon-bearing rocks

Vladimir Burtman* and Michael S. Zhdanov, University of Utah, Technolmaging; Masashi Endo, Technolmaging; Thomas Ingeman-Nielsen, Technical University of Denmark

EM 4.5 (0682–0686)

The assessment and evolution of offshore gas hydrate deposits using seafloor controlled source electromagnetic methodology

Reza Mir* and Nigel Edwards, University of Toronto

EM 4.6 (0687–0692)

A feasibility study of CO₂ sequestration monitoring using the mCSEM method at a deep brine aquifer in a shallow sea

Seogi Kang*, Soon Jee Seol, and Joongmoo Byun, Hanyang University

EM 4.7 (0693–0696)

A multisource approach for deep electrical resistivity tomography monitoring

Douglas J. LaBrecque* and Paula Adkins, Multi-Phase Technologies, LLC

EM 4.8 (0697–0701)

Time lapse CSEM measurements for reservoir monitoring using a vertical receiver-transmitter setup

T. Holten, Petromarker; E. G. Flekkøy*, Petromarker, University of Oslo

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The contrast of frequency response characteristics between long bipole and circle current sources

Cheng Xu*, Qingyun Di, and Miaoyue Wang, Chinese Academy of Sciences

EM P1.2 (0708–0712)

BSEM 3D inversion research and application case

Wang Zhigang*, He Zhanxiang, and Tang Biyan, BGP, CNPC; Wan Le, CEMI, University of Utah

EM P1.3 (0713–0717)

Analysis of the effects of the air interaction on the marine electromagnetic responses

Jinsong Shen and Linsen Zhan, China University of Petroleum; Wei Zhao and Jicai Ding, CNOOC, Beijing

EM P1.4 (0718–0722)

Effect of over- and under-burden on time-lapse CSEM monitoring capabilities

Arash JafarGandomi* and Andrew Curtis, The University of Edinburgh

EM P1.5 (0723–0729)

Applications of 2D CSAMT inversion with topography

Lei Da*, Hu Ping, and Wang Shu-min, Institute of Geophysical and Geochemical Exploration; Meng Xiao-hong, China University

EM P1.6 (0730–0734)

Application of marine controlled-source electromagnetic sounding to submarine massive sulphides explorations

Naoto Imamura*, Tada-nori Goto, Junichi Takekawa, and Hitoshi Mikada, Kyoto University

EM P1.7 (0735–0739)

An integrated approach for de-risking hydrocarbon prospects using induced polarization anomalies in highly conductive media

Peter Y. Legeydo*, LLC Siberian Geophysical Research and Production Company; Paul C. H. Veeken, GEOPS; V. F. Kruglyak, CJSC; Elvany Neftegaz, Sergey A. Ivanov, and Evgeny V. Ageenkov, SGRPC

EM P1.8 (0740–0744)

Joint inversion of seismic and magnetotelluric data with structural constraint based on dot product of image gradients

Dmitry Molodtsov* and Boris Kashtan, Saint Petersburg State University; Yuri Roslov, SeismoShelf

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Full-waveform model and measurements of electromagnetic to seismic conversion

Menne D. Schakel* and Evert C. Slob, Delft University of Technology; Zhenya Zhu, Massachusetts Institute of Technology

EM P2.2 (0750–0755)

Study and application of a modified TEM method in Tibet, China

Guo-qiang Xue* and Nan-nan Zhou, Chinese Academy of Science; Xiu Li, Chang'an University and Jiangsu University

EM P2.3 (0756–0760)

Numerical integration in the calculation of the 2.5D response of a very large loop

Valdelirio da Silva e Silva, Cicero Regis, and Allen Q. Howard Jr., Universidad Federal do Para, National Institute of Science and Technology of Petroleum Geophysics

EM P2.4 (0761–0765)

Practice of TEM tunnel prediction in Tsingtao subsea tunnel

Huai-feng Sun*, Shu-cai Li, Mao-xin Su, and Yi-guo Xue, Shandong University; Xiu Li, Zhi-peng Qi, Ying-ying Zhang, and Qiong Wu, Chang'an University

Processing and Inversion

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Understanding imaging methods for potential field data

Maurizio Fedi, University of Naples Federico II, Italy; Mark Pilkington, Geological Survey of Canada

GM 1.2 (0791–0795)

3D inversion of full tensor magnetic gradiometry (FTMG) data

Michael S. Zhdanov, University of Utah, TechnoImaging; Hongzhu Cai*, University of Utah; Glenn A. Wilson, TechnoImaging

GM 1.3 (0796–0800)

Automatic modelling and inversion for dykes from magnetic tensor gradient profiles: Recent progress

Des Fitzgerald*, Intrepid Geophysics; Horst Holstein, University of Aberystwyth; Clive Foss, Commonwealth Scientific and Industrial Research Organisation (CSIRO)

GM 1.4 (0801–0805)

Radial gravity inversion constrained by total anomalous mass excess for retrieving 3D bodies

Vanderlei C. Oliveira Jr.* and Valéria C. F. Barbosa, Observatório Nacional

EM P2.5 (0766–0770)

3D finite-element simulation of electromagnetic data for inductive and galvanic components

Seyedmasoud Ansari* and Colin G. Farquharson, Memorial University of Newfoundland

EM P2.6 (0771–0775)

Geological parameters effecting controlled-source electromagnetic feasibility: A North Sea sand reservoir example

Michelle Ellis and Robert Keirstead, RSI

EM P2.7 (0776–0780)

Interpretation of 3D MT survey data in the southeastern Bukhara-Khivinsky oil and gas prospective region of Uzbekistan

T. L. Babajanov, G. B. Kim, and G. Yu. Yuldashev, Uzbekgeofizika; L. Fox and O. Ingerov*, Phoenix Geophysics Ltd

EM P2.8 (0781–0785)

Forward and inversion modeling of the three-dimension integral equation basing on born approximation

Ronghui Xue and Qingyun Di, Chinese Academy of Sciences

GM 1.5 (0806–0810)

Simultaneous joint inversion for susceptibility and velocity

Michele De Stefano*, WesternGeco

GM 1.6 (0811–0814)

Description and evaluation of a full tensor interpolation method

James Brewster*, Bell Geospace Inc

GM 1.7 (0815–0819)

3D imaging of gravity gradiometry data from a single borehole using potential field migration

Xiaojun Liu*, University of Utah; Michael S. Zhdanov, University of Utah, TechnoImaging

GM 1.8 (0820–0824)

Robust 3D gravity gradient inversion by planting anomalous densities

Leonardo Uieda* and Valeria C. F. Barbosa, Observatório Nacional

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GM 2.1 (0825–0829)

3D potential field migration for rapid imaging of gravity gradiometry data – A case study from Broken Hill, Australia, with comparison to 3D regularized inversion

Michael S. Zhdanov, Martin Cuma, and Le Wan*, University of Utah and Technolmaging; Xiaojun Liu, University of Utah; Glenn A. Wilson, Technolmaging

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Structural mapping of the Vinton salt dome, Louisiana, using gravity gradiometry data

Chris Ennen* and Stuart Hall, University of Houston

GM 2.3 (0836–0840)

Lithologic characterization using magnetic and gravity gradient data over an iron ore formation

Cerica Martinez*, Yaoguo Li, and Richard Krahenbuhl, Colorado School of Mines; Marco Braga, Vale, Brazil

GM 2.4 (0841–0845)

Inversion of regional gravity gradient data over the Vredefort Impact Structure, South Africa

Cerica Martinez* and Yaoguo Li, Colorado School of Mines

GM 2.5 (0846–0850)

Integrated interpretation of the gravity, magnetic, seismic and well data to predict stratigraphic play areas in East Texas/North Louisiana Basin

Serguei Goussev*, Rao Yalamanchili, and Hassan Hassan, Fugro Gravity and Magnetic Services Inc.; Marianne Rauch-Davies and Paul A. Smith, NEOS GeoSolutions

GM 2.6 (0851–0855)

Integrating geophysical methods to study subsurface features of the Snake River Plain, Idaho

Murari Khatiwada* and G. Randy Keller, The University of Oklahoma

GM 2.7 (0856–0860)

Recovery and reprocessing of legacy geophysical data from the archives of the State Company of Geology and Mining (GEOSURV) of Iraq and Iraq Petroleum Company (IPC)

David V. Smith*, and Benjamin R. Drenth, USGS; J. Derek Fairhead and Xiaia Lei, GETECH; Jeffrey A. Dark, Frontier Processing Company; Khaldoun Al-Bassam, GEOSURV

GM 2.8 (0861–0865)

Magnetic and magneto-gradiometric surveying using a simulated unmanned aircraft system

Raymond Caron*, Claire Samson, and Paul Straznicky, Carleton University; Stephen Ferguson, Reed Archer, and Luise Sander, Sander Geophysics Limited

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3D gravity inversion constrained by stereotomography

Martin Panzner*, NTNU; Jorg Ebbing, Geological Survey of Norway, Trondheim; Michael Jordan, SINTEF Petroleum Research

GM P1.2 (0872–0876)

Separation of potential field data using spatial filtering

Hyoungrea Rim, Hyen Key Jung, Yeoung-Sue Park, Muteak Lim, and Young-hong Shin, Korea Institute of Geoscience and Mineral Resources

GM P1.3 (0877–0881)

Forward modelling of gravity data for unstructured grids using the finite-volume method

Hormoz Jahandari* and Colin G. Farquharson, Memorial University of Newfoundland

GM P1.4 (0882–0886)

Density function evaluation from borehole gravity meter data based on a regularized deconvolution algorithm: A synthetic model study

Roman Pasteka* and Roland Karcol, Comenius University, Geophysical Institute of Slovak Academy of Sciences and Department of Applied and Environmental Geophysics

GM P1.5 (0887–0891)

Enhancement of the total horizontal gradient of magnetic anomalies using tilt derivatives: Part II – Application to real data

Francisco J. F. Ferreira*, Luís G. de Castro, Alessandra B. S. Bongioiolo, Jeferson de Souza, and Marco A. T. Romeiro, UFPR

GM P1.6 (0892–0896)

Exploring shallow biogenic gas with high-precision gravity data

Hui Yang*, Youyan Zhang, Baihong Wen, Shiyong Yu, and Xiaoping Qi, RIPED, PetroChina; Dade Ma and Ziyuan Xu, Research Institute of Qinghai Oilfield, PetroChina

GM P1.7 (0897–0901)

Gravity and deep seismic transects across the Precambrian Borborema Province, NE Brazil

David L. de Castro and João M. Pinheiro, Universidad Federal do Rio Grande do Norte; Liliana S. Osako, Ministério do Meio Ambiente; José E. P. Soares and Reinhardt A. Fuck, Universidad de Brasília; Marcus V. A. G. Lima, Universidad de São Paulo

GM P1.8 (0902–0906)

In-depth imaging of an iron orebody from Quadrilatero Ferrífero using 3D gravity gradient inversion

Dionísio Uendro Carlos*, VALE S.A., Observatório Nacional; Leonardo Uieda and Valéria C. F. Barbosa, Observatório Nacional; Marco A. Braga and Antonio Augusto Seabra Gomes Jr., VALE S.A.

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Study of potential gas eruption by seismic survey in Lake Kivu

De-hua Han, Min Sun, and Fuyong Yan, RPL, University of Houston

HA 1.2 (0912–0916)

Critical resource needs in the geoscience profession: Geoscience student-to-professional transitions

Leila M. Gonzales* and Christopher M. Keane, American Geological Institute

HA 1.3 (0917–0921)

Joint inversion of three-component microtremor measurements and microtremor array measurements at Mexico City

Koichi Hayashi*, Geometrics; Atsushi Nozu and Masanori Tanaka, Port and Airport Research Institute; Haruhiko Suzuki, OYO Corporation; Efraín Ovando Shelley, Universidad Nacional Autonoma de Mexico

HA 1.4 (0922–0926)

Assessing geohazards near Kingston Jamaica: New results from chirp seismic imaging

Matthew J. Hornbach, Paul Mann, Cliff Frohlich, and Kathy Ellins, The University of Texas at Austin; Lyndon Brown, The University of The West Indies

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An integrated water study of Chasnigua, Honduras

Catherine Skokan*, David Munoz, and Adrian Weaver, Colorado School of Mines

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Integrated geophysical and geochemical investigations for identifying potable water sources on Ampoi Valley, Romania

Cezar Iacob*, Ionelia Panea, Razvan Orza, Mihai Furnica, Denisa Jianu, and Victor Mocanu, University of Bucharest

HA 1.7 (0936–0940)

Hydrogeophysical investigations at the Dayspring Children's Village: Quantifying the effect of invasive tree species

Susan J. Webb*, David Ngobeni, Michael Jones, Tamiru Abiye, Nirocca Devkurran, University of the Witwatersrand, South Africa; Madeline Lee, McMaster University, Ontario; Louise Pellerin, Green Geophysics; Darren Burrows, Fugro Airborne, South Africa

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The value of visualization with more than 256 colors

Toan Dao* and Kurt J. Marfurt, The University of Oklahoma

INT 1.2 (0946–0950)

Using a hue-saturation color map to visualize dewatering faults in the overburden of the Hod Field, North Sea

Bradley C. Wallet* and Victor Aarre, Schlumberger Norway Technology Center; Andrew Davids, Hess; Toan Dao and Kurt J. Marfurt, University of Oklahoma

INT 1.3 (0951–0955)

Ultra-thin, lacustrine sandstones imaged on stratal slices in the Cretaceous Qijia Depression, Songliao Basin, China

Hongliu Zeng*, The University of Texas at Austin; Xiaomin Zhu, China University of Petroleum (Beijing); Rukai Zhu, RIPED, PetroChina; Qingshi Zhang, Research Institute, Daqing Oilfield Company

INT 1.4 (0956–0959)

Thin beds: Seismic analysis workflows to extract hidden events

Gaynor Paton, Jesus Nunez, and Katy Sutton, FFA

INT 1.5 (0960–0964)

Stratigraphic coordinate system

Parvaneh Karimi* and Sergey Fomel, The University of Texas at Austin

INT 1.6 (0965–0969)

Automatic horizon picking in 3D seismic data using optical filters and minimum spanning tree

Yingwei Yu*, Cliff Kelley, and Irina Mardanova, Seismic Micro-Technology, Inc.

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Nonvertical deformations for seismic image flattening

Simon Luo and Dave Hale, Colorado School of Mines

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The interpreter's guide to depth imaging

Scott MacKay, MacKay Consulting

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INT 2.1 (0980–0984)

Structural curvature versus amplitude curvature

Satinder Chopra, Arcis Corporation; Kurt J. Marfurt, University of Oklahoma

INT 2.2 (0985–0989)

Role of seismic attributes for sub-seismic fault/fracture characterization: A Kuwait example

Anjaneyulu S.*, Abdul Aziz H., Ali Sajer, Sanjeev S. Thakur, and Afrah Al-Ajmi, Kuwait Oil Company

INT 2.3 (0990–0994)

Observing fracture lineaments with Euler curvature

Satinder Chopra*, Arcis Corporation, Calgary; Kurt J. Marfurt, The University of Oklahoma

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Relation between seismic curvatures and fractures identified from image logs: Application to the Mississippian reservoirs of Oklahoma, USA

Malleswar Yenugu and Kurt J. Marfurt, University of Oklahoma

INT 2.5 (0999–1003)

Improved fault segmentation using a dip guided and modified 3D Sobel filter

Ahmed Adnan Aqrabi* and Trond Hellem Boe, Schlumberger Norway Technology Center

INT 2.6 (1004–1008)

Structure-preserving smoothing for 3D seismic attributes

Saleh Al-Dossary* and Yuchun Eugene Wang, Saudi Aramco

INT 2.7 (1009–1013)

Use of seismic attributes in structural correction of gas cloud zone and fractures understanding of buried hill: A case study from Bohai Bay, China

Huajing Chen*, Donghong Zhou, Gang Wei, Xin Wang, and Dayong Guan, China National Offshore Oil Corporation(CNOOC), China Limited Tianjin Branch

INT 2.8 (1014–1018)

Detecting salt domes using a dip guided 3D Sobel seismic attribute

Ahmed Adnan Aqrabi, Trond Hellem Boe, and Sergio Barros, Schlumberger Norway Technology Center

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Wei Wang*, Wenchao Chen, Wencheng Liu, Jin Xu, and Jinghuai Gao, Xi'an Jiaotong University

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Removing acquisition footprint from legacy data volumes

Oswaldo Davogusto* and Kurt J. Marfurt, The University of Oklahoma

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Enhancing resolution of nonstationary seismic data by molecular-gabor frame

Jinghuai Gao* and Lingling Wang, Xi'an Jiaotong University; Wei Zhao and Xiudi Jiang, Research Center of CNOOC

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Mohsen Minaei* and Thomas L. Davis, Colorado School of Mines

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Application of spectral decomposition in hydrocarbon detection

Wei Xiaodong*, Wang Xuejun, Zhang Yanqing, Cai Jiaming, and Shao Yongmei, BGP, CNPC

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Adaptive optimal-kernel time-frequency representation and its application in characterizing seismic attenuation

Xiaokai Wang*, Jinghuai Gao, Wenchao Chen, and Jin Xu, Xi'an Jiaotong University; Wei Zhao and Xiudi Jiang, China National Offshore Oil Corporation Research Center

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Rui Cai* and Yuefeng Sun, Texas A&M University

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Spectral decomposition with FXY preconditioning

David Bonar* and Mauricio Sacchi, University of Alberta

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Matt Jameson*, Steve Wells, Jennifer Greenhalgh, and Ron Borsato, Petroleum Geo-Services

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Steve Wells*, PGS; Rob Gawthorpe and Mads Huuse, University of Manchester

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Adedolapo Ogunsade* and Abraham Adepelumi, Obafemi Awolowo University

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Brad Robinson*, Husky Energy Inc.

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Nabanita Gupta*, Supratik Sarkar, and Kurt J. Marfurt, University of Oklahoma

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Severine Lalande*, Marc Elias, Celso Gomes, Patrick Chaffel, Pierre Jousselin, and Laurent Lemaistre, TOTAL

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Wanhui Liu*, Lichuan Yuan, Baorong Xu, Jun Tang, Lily Wang, and Qihai Nie, BGP, CNPC

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Joint imaging of geophysical data: Case history from the Nordkapp Basin, Barents Sea

Ketil Hokstad*, Bente Fotland, Graeme Mackenzie, Vaka Antonsdottir, Stig-Kyrre Foss, Christopher Stadler, Christine Fichler, Marco Haverl, Bärbel Monika Traub Waagan, and Eva Andrea Myrlund, Statoil; Luca Masnaghetti and Federico Ceci, WesternGeco GeoSolutions; Pierre-Yves Raya, Fugro-FSI

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Role of high quality seismic data in field development and production through case studies from a giant offshore carbonate field, Abu Dhabi, UAE

Akmal Sultan, Jie Zhang, H. Ewart Edward, S. Ahmed Hage, Khaled Shahata, and Kamran Jan, Zakum Development Company

INT 5.2 (1108–1112)

Application of high-density 3D seismic data in the old development regions

Yu Baoli, Zhao Ziaohui, and Liu Yamiao, BGP, CNPC

INT 5.3 (1113–1117)

Sub-seismic discontinuity mapping to infer fracture potential of tight carbonate reservoirs of the early Cretaceous Makhul Formation in Kuwait

Raju T. Arasu*, Sunil K. Singh, Badruzzaman Khan, Talal F. Al-Adwani, Prabir Kumar Nath, Ali Faleh Naser Abu-Ghneej, and Sara Bader, Kuwait Oil Company

INT 5.4 (1118–1123)

Fracture prediction based on stress analysis and seismic information: A case study

Liu Haijun*, Ling Yun, Guo Xiangyu, Guo Jun, and Sun Desheng, BGP, CNPC

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Analysis of 3D P-wave seismic data for fracture detection: A case study

Daolin Lu, Xiangyang Li, and Bangrang Di, China University of Petroleum, CNPC

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Use of seismic technology in support of reserves booking, Gorgon Field, Australia

Peter Swinburn, Prasanta Nayak, and Raphic van der Weiden, Shell Technology Centre Bangalore

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Seismic stratigraphic interpretation from a geological model: A North Sea case study

Sébastien Lacaze*, Fabien Pauget, and Marion Mangue, Eliis; Michel Lopez and Aurélien Gay, University of Montpellier II

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DHI confidence assessment for field evaluation: An integrated geosciences necessity

Pierre-Louis Pichon*, Sabine Delahaye, Greg Fabre, and Pascal Desegaulx, Total SA

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3D seismic curvature and flexure for unconventional fractured reservoir characterization at Teapot Dome (Wyoming)

Dengliang Gao*, Tom Wilson, Lierong Zhu, West Virginia University; Kurt J. Marfurt, University of Oklahoma

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Volume co-rendering of seismic attributes: A great aid to seismic interpretation

Satinder Chopra, Arcis Corporation; Kurt J. Marfurt, University of Oklahoma

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Volumetric estimates of seismic reflector rotation and convergence providing value addition in stratigraphic analysis.

Satinder Chopra, Arcis Corporation; Kurt J. Marfurt, University of Oklahoma

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Seismic facies classification using 2D and 3D multiattribute hierarchical clustering algorithms

Hamid Sabeti*, Birjand University of Technology, Iran, University of Tehran; Babak Nadjar, University of Tehran

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New texture attributes from local 2D Fourier spectra

Anne H. S. Solberg* and Leiv-J. Gelius, University of Oslo

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High-quality seismic bicubic interpolation in a 3D visualization environment

Jim Ching-Rong Lin and Zitao Xu, Halliburton and Landmark Software and Services

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Applying difference of frequency spectrum of wavelet to detect hydrocarbon of carbonate fractured reservoir: A case study of Z2 well field in Tarim basin

Qinhua Sun*, Huquan Zhang, Panjian Guo, Jianxin Liu, and Xiaomei Liu, Research Institute of Petroleum Exploration & Development-Northwest, PetroChina

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Seismic pattern detection using very fast simulated annealing

Kou-Yuan Huang* and Yueh-Hsun Hsieh, National Chiao Tung University

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3D structural interpretation and volumetric analysis over Dara field, onshore Niger Delta

A. O. Daramola* and M. A. Ayuk, Federal University of Technology, Akure

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A quantitative method for analyzing fracture-cave carbonates reservoirs

Wang Guizhong, BGP, CNPC, College of Energy, CDUT; Xu Bo,* Dan Guangjian, and Zeng Xiangzhou, BGP, CNPC

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Carbonate reservoir and gas-bearing property detection using sweetness

Duan Yushun*, Peng Zhaoquan, Zeng Lingbang, and Bi Mingbo, BGP, CNPC

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Exploration challenges and opportunities in deep water Makassar Strait basins, Indonesia: Review of carbonate play based on sequence stratigraphy and seismic characterization

Cipi Armandita*, Nugrahany Pudyono, Sunjaya E. Saputra, and Sumaryana, BPMP-GAS (Executive Agency for Upstream Oil and Gas Business Activities), Republic of Indonesia; M. Maruf Mukti, Research Centre for Geotechnology, LIPI

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Fidelity and usability analysis of the resolution enhanced poststack seismic data

Jiang Xiudi*, Zhu Zhenyu, and Zhao Wei, CNOOC Research Institute; Gao Jinghui and Wang Lingling, Xi'an Jiaotong University

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Seismic dynamics and facies of high-productivity hydrocarbon reservoirs

Hu Xueping*, Wan Xiaoping, and Zhang Hua, BGP, CNPC

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Seismic, heat flow evidences for gas hydrate: Shenhu Area of Northern South China Sea

Lun Li,* University of Houston and China University of Geosciences, Beijing; Xinhua Lei and Xin Zhang, China University of Geosciences, Beijing; Guangxue Zhang, Guangzhou Marine Geological Survey, China

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Regional velocity trend in Upper Assam Basin and its relations with basinal depositional history

K. L. Mandal*, S. Chakraborty, and R. Dasgupta, Oil India Limited

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3D geology, temperature, heat flow, and thermal gradient modeling of the north Perth Basin, Western Australia

Helen Gibson*, Ray Seikel, and Desmond FitzGerald, Intrepid Geophysics; Mike Middleton and Ameer Ghori, Department of Mines and Petroleum Western Australia

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Imaging seismic velocity changes caused by mining using underground and surface sources

Andrew King, National Institute for Occupational Safety and Health

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3D reflection seismic investigation for mine planning and exploration in the Kevitsa Ni-Cu-PGE deposit, Northern Finland

Alireza Malehmir, Christopher Juhlin*, Uppsala University; Chris Wijns and Petri Valadti, First Quantum Minerals Ltd; Milovan Urosevic, Curtin University; Emilia Koivisto and Pekka Heikkinen, University of Helsinki; Ilmo Kukkonen and Markku Paananen, Geological Survey of Finland

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Interpretation of out of loop data in large fixed-loop TEM surveys

Les P. Beard, Zonge International, Tucson

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Integrated magnetotelluric and seismic reflection study: Skellefte Ore District, northern Sweden

María de los Ángeles García Juanatey*, Juliane Hübner, Christopher Juhlin, Alireza Malehmir, and Ari Tryggvason, Uppsala University

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The relationship between the deep faults and the geothermal structures identified on the Moesian Platform territory

Ionelia Panea*, Aurelian Negut, and Victor Mocanu, University of Bucharest

MG 1.7 (1257–1261)

ZTEM airborne tipper AFMAG results over the Copaque Porphyry, northern Chile

Carlos Izarra, Jean M. Legault*, and Ali Latrous, Geotech Ltd

MG 1.8 (1262–1266)

Using ERA low frequency E-field profiling and UBC 3D frequency domain EM inversion algorithm to delineate and discover a mineralized zone in Porcupine District, Ontario, Canada

Vlad Kaminski* and Douglas Oldenburg, University of British Columbia; Alexander Prikhodko, Geotech Ltd.

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Multicomponent seismic data reconstruction using the quaternion Fourier transform and POCS

Aaron Stanton and Mauricio Sacchi, University of Alberta

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Mitigation of streamer noise impact in multicomponent streamer wavefield reconstruction

Massimiliano Vassallo*, Kurt Eggenberger, Tony Curtis, Dirk-Jan van Manen, and Ahmet Kemal Özdemir, WesternGeco; Ali Özbek and Johan Robertsson, Schlumberger

MS 1.5 (1278–1282)

C-wave spectral broadening by wavelet transformation to match P-wavelengths: Marcellus shale

James Gaiser*, Richard Verm, and Alvaro Chaveste, Geokinetics Inc.

MS 1.6 (1283–1287)

High-resolution measurements of S-wave attenuation within the weathering layer of an Alberta heavy oil field

Kristof De Meersman*, CGGVeritas, Calgary

MS 1.7 (1288–1292)

PP and PS interferometric images of near-seafloor sediments

Seth S. Haines*, U. S. Geological Survey, Colorado

MS 1.8 (1293–1297)

9C 2D Piceance survey: Near-surface velocity model building and tomostatics solution

Inmaculada Durá-Gómez* and Brian Zurek, ExxonMobil Exploration Company

Case Histories

MS 2.1 (1298–1302)

Enhancing gas field discovery by PP/PS imaging and joint inversion
Bangliu Zhao, PetroChina; Daxing Wang and Songqun Shi, Petroleum Research Institute, PetroChina Changqing Ltd.; Xiao-gui Miao*, Pu Wang, and Shen Liang, CGGVeritas

MS 2.2 (1303–1307)

Prestack PP & PS wave joint stochastic inversion in the same PP time scale

Zhiwen Deng* BGP Inc., CNPC, University of Texas at Austin; Mrinal K. Sen and Yang Xue, University of Texas at Austin; Uxin Wang, Geophysical Research Institute of Shengli Oilfield; Xuming Bai, BGP Inc., CNPC

MS 2.3 (1308–1312)

Interpretation of sandstone reservoir using 3D-3C seismic data in Sulige Gas Field

Wanxue Xie*, Yalin Li, Zhirong Li, Jianku Sun, Zhong Li, and Guangming He, Sichuan Geophysical Company, CNPC

MS 2.4 (1313–1317)

Acquisition and processing of a cable-less 3D3C survey in East Texas

Rodney Johnston*, John Younger, Eric Lyons, and Ray Barrett, BP America Production Co.

MS 2.5 (1318–1322)

Fracture detection using PS converted waves: A case study from Daqing oil field

Hengchang Dai* and Xiang-Yang Li, British Geological Survey; Richard Ford, Imperial College London; Chenye Yu, PetroChina Daqing Oilfield Limited; Jianmin Wang, CNPC Daqing Geophysical Exploration

MS 2.6 (1323–1327)

Analysis and interpretation of a 3D3C single sensor pilot data set: East Texas Blocker Field Case Study

Rosemarie Geetan*, Ray Barrett, Abhijit Gangopadhyay, Rodney Johnston, and John Younger, BP America Inc.

MS 2.7 (1328–1332)

Monte-Carlo statics on P-P or P-Sv wide-azimuth data

David Le Meur*, Guillaume Poulain, Frédérique Bertin, and Anne Rollet, CGGVeritas

MS 2.8 (1333–1337)

Correction for distortion in polarization of reflected shear waves in isotropic and anisotropic media

Terence Campbell* and Robert H. Tatham, University of Texas at Austin

Environmental and Geotechnical Applications

NS 1.1 (1338–1342)

Three dimensional mapping of a buried bedrock valley with two dimensional seismic refraction lines to develop accurate boundary conditions of a coastal hydrogeologic model in southwest Devon, United Kingdom

Eric B. Avalos, Illinois State University

NS 1.2 (1343–1347)

Physics-based integration of shear wave dispersion properties for soil property estimation: Laboratory investigation

Alimzhan Zhubayev* and Ranajit Ghose, Delft University of Technology

NS 1.3 (1348–1352)

A nonlinear Bayesian approach for upscaling local-scale hydraulic conductivity measurements based on local- and regional-scale geophysical data

Paolo Ruggeri, James Irving, and Klaus Holliger*, University of Lausanne; Erwan Gloaguen, INRS

NS 1.4 (1353–1357)

GPR images reconstruction with Maxwell curl equation datuming based on Kirchhoff integral solution

Yonghui Zhao*, Jiansheng Wu, and Jun Chen, Tongji University; Shuangcheng Ge, Zhejiang Institute of Hydraulics and Estuary

NS 1.5 (1358–1362)

Surface wave analysis for studying elastic properties of glacier bed sediments

Takeshi Tsuji*, Tatsunori Ikeda, and Toshifumi Matsuoka, Kyoto University; Tor Arne Johansen and Bent Ole Ruud, University of Bergen

NS 1.6 (1363–1367)

Classification of MEC with the ALLTEM at Camp Stanley, Texas

Theodore Asch*, Craig Moulton, and David V. Smith, U. S. Geological Survey

NS 1.7 (1368–1372)

Mapping laterally varying conductance using EM gradients over dry tailings ponds

Michal Kolaj* and Richard Smith, Laurentian University; Claire Samson, Carleton University

NS 1.8 (1373–1377)

Recent faulting in western Nevada revealed by multiscale seismic reflection

Roxanna N. Frary*, John N. Louie, Annie Kell, Amy Eisses, Graham M. Kent, and Robert Karlin, University of Nevada; William J. Stephenson, Jackson K. Odum, and Robert L. Baskin, United States Geological Survey; Neal W. Driscoll, University of California, San Diego; Satish Pullammanappallil, Op tim; Lee M. Liberty, Boise State University

Surface Waves

NS 2.1 (1378–1383)

Exploiting the crossterms of the virtual Rayleigh-wave Green tensor for surface-wave inversion

K. van Wijk, D. Mikesell, and M. Haney, Boise State University; H. Douma, ION Geophysical, GXT Imaging Solutions

NS 2.2 (1384–1390)

Multichannel analysis of surface waves (MASW) of models with high shear-wave velocity contrast

Julian Ivanov*, Richard D. Miller, Shelby Peterie, Chong Zeng, Jianghai Xia, and Tyler Schwenk, The University of Kansas

NS 2.3 (1391–1395)

Density prediction from ground-roll inversion

Soumya Roy* and Robert R. Stewart, University of Houston

NS 2.4 (1396–1400)

Combined particle motion and fluid pressure measurements of surface waves

Karel van Dalen*, Guy Drijkoningen, and Karel Heller, Delft University of Technology; David Smeulders, Eindhoven University of Technology, Delft University of Technology; Christ Glorieux, Bart Sarens, and Bert Verstraeten, Katholieke University Leuven

NS 2.5 (1401–1405)

Near-surface void identification using MASW and refraction tomography techniques

Jeffery J. Nolan*, Steven D. Sloan, Seth W. Broadfoot, Jason R. McKenna, and Owen M. Metheny, US Army Engineer Research & Development Center

NS 2.6 (1406–1410)

Effect of lateral heterogeneity in the soil column on shear-wave velocity estimation by Rayleigh-wave inversion

Oz Yilmaz*, Anatolian Geophysical, Turkey; Argun Kocaoglu, Istanbul Technical University

NS 2.7 (1411–1415)

Surface-wave inversion for near-surface shear-wave velocity estimation at Coronation field

Huub Douma*, ION Geophysical, GXT Imaging Solutions; Matthew Haney, Boise State University

NS 2.8 (1416–1420)

Near-surface shear-wave velocity measurements in unlithified sediment

Benjamin T. Rickards* and Don Steeples, The University of Kansas; Rick Miller, Julian Ivanov, and Shelby Peterie, Kansas Geological Survey; Steven D. Sloan and Jason R. McKenna, US Army Engineer Research & Development Center

General Contributions

NS P1.1 (1421–1424)

Hydrogeophysics and the settlement of San Marcos Pueblo, NM: Investigations by the SAGE geophysical field course

John Ferguson*, University of Texas, Dallas; Daniella Rempe, University of California, Berkeley; Anna Nowicki, Michigan State University; Kate Talaksen, West Virginia University; Nathaniel Lindsey, University of Rochester; Jason Chang, University of California; Louise Pellerin, Green Engineering

NS P1.2 (1425–1429)

The application of 3-D ESMODEL in loess plateau of western China

Enliang Liu*, LandOcean Energy Services Co. Ltd.; Lixin Chen, Beijing Feiruixinlong Technology Co., Ltd.; Zhihui Liu, Henan Polytechnic University

NS P1.3 (1430–1434)

Study of two-step tomographic inversion for near surface modeling

Feng Xinyuan*, Research Institute of Petroleum Exploration & Development-Northwest, Petrochina; Wang Xishuang, Petrochina Exploration and Production Company; Wang Yuchao, Hu Ziduo and Liu Liansheng

NS P1.4 (1435–1439)

NMX: A method for velocity analysis avoiding NMO stretch

F. Martin*, M. Almutairi, and S. Fernández, Repsol

NS P1.5 (1440–1444)

Analysis of the influence of vibrators on the first break in refraction statics

Bai Xuming*, Deng Zhiwen, Wei Zhenqian, Zhang Xueyin, Tang Chuanzhang, and Li Haidong, BGP, CNPC

NS P1.6 (1445–1449)

Near-surface high-frequency absorption compensation in alluvial plain

Qinghui Cui*, Yongjun Rui, and Xinmin Shang, Shengli GRI Sinopec

NS P1.7 (1450–1453)

Validity of acoustic early-arrival waveform tomography for near-surface imaging

Wenhuan Kuang*, Lina Zhang, and Jie Zhang, University of Science and Technology of China (USTC), P. R. China

NS P1.8 (1454–1457)

The multivariate statistic residual static correction method and examples of its application

Feng Faquang*, Zhang Yusheng, Deng Zhiwen, and Wang Haili, BGP, CNPC

Methods and Case Studies

PSC 1.1 (1458–1462)

Estimation of effective anisotropy from microseismic: A shale-gas case study

Paritosh Singh*, Colorado School of Mines; Indrajit Das, Stanford University; Vladimir Grechka, Shell E&P Company

PSC 1.2 (1463–1467)

Distinguishing faults and fractures using microseismic energy release in the Barnett Shale

Scott Wessels*, Michael Kratz, and Alejandro De La Pena, MicroSeismic Inc

PSC 1.3 (1468–1472)

Comparison of microseismic results from the Bakken formation processed by three different companies: Integration with surface seismic and pumping data

Kristin Hayles*, Robert L. Horine, Steve Checkles, and J. P. Blangy, Hess Corporation

PSC 1.4 (1473–1477)

Long period, long duration seismic events during hydraulic fracture stimulation of a shale gas reservoir

Indrajit Das* and Mark D. Zoback, Stanford University

PSC 1.5 (1478–1482)

Reflection imaging of the Aneth CCS reservoir using microseismic multiplet sources

Hiroshi Asanuma, Keita Tamakwa, and Hiroaki Niitsuma, Tohoku University; Nobukazu Soma, AIST; James Rutledge and Charlotte Rowe, LANL

PSC 1.6 (1483–1487)

Fluid injection related seismicity in The Geysers: Nonlinear analysis and model

O. Yu. Melchaeva* and S. B. Turuntaev, Russian Academy of Sciences

PSC 1.7 (1488–1492)

A combined borehole/surface broadband passive seismic survey over a gas storage field

Alex Goertz* and Konrad Cieslik, Spectraseis AG; Ernest Hauser and Gary Watts, Wright State University; Steve McCrossin, Precision Geophysical; Phil Zbasnik, Dominion East Ohio Company

PSC 1.8 (1493–1498)

Analysis of passive surface-wave noise in surface microseismic data and its implications

Farnoush Forghani-Arani* and Mike Batzle, Colorado School of Mines; Mark Willis and Michael Davidson, ConocoPhillips; Seth Haines, U. S. Geological Survey

Monitoring and Uncertainty

PSC 2.1 (1499–1503)

Improved time-dependent seismic monitoring systems for shallow reservoir characterization

Delaine Reiter, Mark Leidig*, and Aaron Ferris, Weston Geophysical Corp.; William Rodi, Massachusetts Institute of Technology

PSC 2.2 (1504–1508)

Comparison of simultaneous downhole and surface microseismic monitoring in the Williston Basin

David E. Diller*, Nanoseis; Stephen P. Gardner, Whiting Oil and Gas

PSC 2.3 (1509–1513)

Uncertainties in full waveform moment tensor inversion due to limited microseismic monitoring array geometry

Ahyi Kim*, Schlumberger

PSC 2.4 (1514–1518)

Ambiguity in microseismic monitoring

Rodney Johnston*, BP America Production Co; Jeff Shralow, BP America Production Co [retired]

PSC 2.5 (1519–1523)

Challenges for microseismic monitoring

Jessica Griffin, Microseismic Inc., Houston

PSC 2.6 (1524–1528)

Uncertainty in surface microseismic monitoring

Michael Thornton*, MicroSeismic Inc.; Leo Eisner, Institute of Rock Structure and Mechanics, ASCR

PSC 2.7 (1529–1533)

Long-term assessment of reservoir integrity utilizing seismic source parameters as recorded with integrated microseismic-pressure arrays

Ted Urbancic*, Marc Prince, and Adam Baig, ESG Solutions, Canada

PSC 2.8 (1534–1538)

Uncertainty in fault plane solutions from moment tensor inversion due to uncertainty in event location

Jing Du* and Norm Warpinski, Pinnacle, A Halliburton Service

Mechanisms and Event Characterization

PSC 3.1 (1539–1543)

Geometric control of earthquake magnitudes by fluid injections in rocks

Serge A. Shapiro*, Oliver S. Kruger, Cornelius Langenbruch, and Carsten Dinske, Freie University at Berlin

PSC 3.2 (1544–1549)

Nonlinear diffusion estimates from hydraulic fracturing of shales

N. Hummel* and S. A. Shapiro, Freie University at Berlin

PSC 3.3 (1550–1554)

Laboratory studies of hydraulic fractures in tight sands at different applied stresses

Camilo Moreno, Yashwanth Chitrala*, Carl Sondergeld, and Chandra Rai, The University of Oklahoma

PSC 3.4 (1555–1559)

Q determination, corner frequency, and spectral characteristics of microseismicity induced by hydraulic fracturing

David W. Eaton*, University of Calgary

PSC 3.5 (1560–1564)

Kinematics of rupture propagation during hydraulic fracturing

Fuxian Song* and M. Nafi Toksöz, MIT

PSC 3.6 (1565–1569)

What does microseismicity tell us about hydraulic fractures?

S. C. Maxwell*, Schlumberger

PSC 3.7 (1570–1575)

Statistical analysis of microseismic event locations and magnitudes, and their geomechanical implications

Melanie Grob and Mirko van der Baan, University of Alberta at Edmonton

PSC 3.8 (1576–1579)

The automatic detection of arrival times of longitudinal and shear waves

Alexandra A. Vikhoreva and Maria A. Krasnova, Russian Academy of Science; Evgeny M. Chesnokov, University of Houston; Lih Kuo, EXCO Resources, Inc

Interferometry in Passive Seismic

PSC 4.1 (1580–1585)

Shear-wave imaging from traffic noise using seismic interferometry by cross-coherence

Nori Nakata*, Kyoto University and Colorado School of Mines; Roel Snieder and Ken Lerner, Colorado School of Mines; Takeshi Tsuji and Toshifumi Matsuoka, Kyoto University

PSC 4.2 (1586–1591)

Ambient vibration interferometry using cross-correlation method and its application to Rayleigh phase velocity measurements

Gang Hu*, ZhengQin He, and JiWen Teng, Institute of Geophysics, China Earthquake Administration, Institute of Geology and Geophysics, Chinese Academy of Sciences, Beijing

PSC 4.3 (1592–1596)

Toward a method for attenuation inversion from reservoir-scale ambient noise OBS recordings

Cornelis Weemstra*, Spectraseis AG, ETH Zurich; Alex Goertz, Spectraseis AG; Lapo Boschi, ETH Zurich

PSC 4.4 (1597–1601)

Ambient seismic noise tomography at Valhall

Sjoerd de Ridder, Stanford University

PSC 4.5 (1602–1607)

Extracting reflectivity response from point-receiver ambient noise

Pascal Edme* and David Halliday, Schlumberger Cambridge Research

PSC 4.6 (1608–1612)

SVD enhanced seismic interferometry for traveltimes estimates between microquakes

Gabriela Melo* and Alison Malcolm, MIT

PSC 4.7 (1613–1617)

Retrieval of reflections from ambient-noise field data using illumination diagnostics

Carlos Almagro Vidal*, Joost van der Neut, Deyan Draganov, Guy Drijkoningen, and Kees Wapenaar, Delft University of Technology

PSC 4.8 (1618–1622)

Essential noise sources for Green's function recovery in passively monitored diffusion systems

Sharmin Shamsalsadati* and Chester J. Weiss, Virginia Tech

Events Locating and First Break Picking

PSC P1.1 (1623–1626)

Artificial neural network based autopicker for microearthquake data

Fred Aminzadeh, Debotyam Maity*, and Tayeb A. Tafti, University of Southern California; Friso Brouwer, dGB Earth Sciences

PSC P1.2 (1627–1631)

Automatic first break detection by spectral decomposition using minimum uncertainty wavelet

Qingqing Liao*, Donald Kouri, Dip Nanda, and John Castagna, University of Houston

PSC P1.3 (1632–1637)

Simultaneous microearthquake location and moment-tensor estimation using time-reversal imaging

Hom Nath Gharti*, Volker Oye, Daniela Kuhn, and Peng Zhao, NORSAR

PSC P1.4 (1638–1642)

A method for microseismic event detection and P-phase picking

G-Akis Tselentis*, Paraskevas Paraskevopoulos, and Efthimios Sokos, University of Patras; Nikolaos Martakis and Athanasios Lois, LandTech Enterprises

PSC P1.5 (1643–1647)

Realistic uncertainty space for microseismic event locations from multiple well recordings

Ulrich Zimmer*, Pinnacle

PSC P1.6 (1648–1652)

Automatic traveltimes picking using local time-frequency maps

Christos Saragiotis* and Tariq Alkhalifah, King Abdullah University of Science and Technology; Sergey Fomel, University of Texas at Austin

PSC P1.7 (1653–1657)

Automatic picking of the first arrival event using the unwrapped-phase of the Fourier transformed wavefield

Yunseok Choi*, Tariq Alkhalifah, and Christos Saragiotis, King Abdullah University of Science and Technology

PSC P1.8 (1658–1662)

Akaike information criterion applied to detecting first arrival times on microseismic data

Andy St-Onge, University of Calgary

Techniques and Processing

PSC P2.1 (1663–1668)

3D polarization analysis of surface and borehole microseismic data

A. Vesnaver*, KFUPM-OGS; G. Menanno and S. I. Kaka, KFUPM; M. Jervis, Saudi Aramco

PSC P2.2 (1669–1673)

Waveform similarity analysis at Cotton Valley, Texas

Karsten Stuermer*, Joern Kummerow, and Serge A. Shapiro, Freie University Berlin

PSC P2.3 (1674–1678)

Reverse time imaging of small earthquakes using 2D array data in Three Gorges Reservoir region, China

Zhihui Zou* and Hua-wei Zhou, Texas Tech University, China University of Geosciences

PSC P2.4 (1679–1682)

Mapping lithospheric structure using depth phase precursors recorded by dense seismic arrays using exploration seismic data processing software- Vista 10.0

Chen Chen*, Larry Brown, Suzanne Kay, and Neil McGlashan, Cornell University

PSC P2.5 (1683–1687)

Reliability of non-double-couple components in microseismic moment

Adam Baig*, Ted Urbancic, Sheri Bowman, Katie Buckingham, and Vladimir Shumila, ESG Solutions

PSC P2.6 (1688–1692)

Analyzing passive seismic attributes: A statistical strategy

Nima Riahi*, ETH Zurich; Brad Birkelo, Spectraseis; Erik H. Saenger, ETH Zurich, Spectraseis

PSC P2.7 (1693–1698)

Microseismic record de-noising using a sparse time-frequency transform

Ismael Vera Rodriguez*, David Bonar, and Mauricio D. Sacchi, University of Alberta

PSC P2.8 (1699–1703)

Wave-equation microseismic imaging and event selection in the image domain

Brad Artman and Ben Witten, Spectraseis Inc

Lithology I

RC 1.1 (1704–1708)

Using reflectivity attributes for accurate delineation of a potential gas reservoir in Chaguaramas Formation, Copa Macoya Field, Guárico sub-Basin, Venezuela

Yaraixa Pérez*, Bice Cortiula, Rafael Pinto, and Massimo Di Giulio, Teikoku Oil & Gas Venezuela; Patricia Gavotti and Gabriel Gil, CCGVeritas

RC 1.2 (1709–1713)

Evaluating Zubair trapping mechanism in west Kuwait: A Kuwait lower cretaceous case study

Nikhil C. Banik*, Heyam Al-Ammar, Hanan Al-Owihan, Manowar Ahmed, and Busi Venkata Ramarao

RC 1.3 (1714–1718)

Probabilistic facies discrimination from simultaneous seismic inversion results in clastics reservoir in southwest Venezuela

Jorge Reveron* and Juan Roomer, PDVSA Intevep, Caracas, Venezuela

RC 1.4 (1719–1723)

Quantitative reservoir characterization through simultaneous inversion: A case study from the Burgan field, Kuwait

Yousef Al-Zuabi*, Osman Al-Khaled, and Karam Abd Rabu, Kuwait Oil Company; Denny Sulistiono and Rafael Celma, Fugro-Jason

Lithology II

RC 2.1 (1744–1748)

Seismic reservoir characterization in resource shale plays: “Sweet spot” discrimination and optimization of horizontal well placement

Arcangelo Sena*, Gabino Castillo, Kevin Chesser, Simon Voisey, Jorge Estrada, Juan Carcuz, Emilio Carmona, and Robert V. Schneider, Hampson-Russell Software and Services, CCGVeritas

RC 2.2 (1749–1753)

Viabilities of PP- wave ray and elastic impedance for hydrocarbon-sand discrimination

Feng Zhang*, British Geological Survey, Imperial College London; Yanghua Wang; Xiangyang Li, British Geological Survey

RC 2.3 (1754–1758)

Reservoir property prediction using the dynamic radial basis function network

Li Lei*, Xiong Wei, Zhan Shifan, and Wan Zhonghong, BGP, CNPC

RC 2.4 (1759–1763)

Three-component converted-wave data inversion and application: A case study of Sulige gas field, China

Bangliu Zhao, PetroChina; Daxing Wang and Songqun Shi, Petroleum Research Institute, PetroChina Changqing Ltd.; Liang Shen*, Xiaogui Miao, and Pu Wang, CCGVeritas

RC 1.5 (1724–1728)

Highly detailed reservoir characterization through geostatistical inversion to assess porosity distribution in the Ratawi limestone, Umm Gudair Field, Kuwait

Mohammed Hameed*, Osman Al-Khaled, Hanadi Al-Qallaf, Keith Edwards, and Pradyumna Dutta, Kuwait Oil Company; Denny Sulistiono, Fugro-Jason

RC 1.6 (1729–1733)

Geostatistical inversion for 3D confidence evaluation of facies prediction: A Gulf of Guinea example

Alexandre Araman*, Thierry Cadoret, and Luis Pernia, Total E&P; David Minken, Total Upstream Nigeria Limited; Rémi Moyen, CCGVeritas

RC 1.7 (1734–1738)

Cluster assisted 3D and 2D unsupervised seismic facies analysis: An example from the Barnett Shale Formation in the Fort Worth Basin, Texas

Atish Roy* and Kurt J. Marfurt, The University of Oklahoma

RC 1.8 (1739–1743)

Artificial immune based self organizing maps for seismic facies analysis

Puneet Saraswat*, Indian School of Mines; Mrinal K. Sen, University of Texas at Austin

RC 2.5 (1764–1768)

Iterative spatial resampling applied to seismic inverse modeling for lithofacies prediction

Cheolkyun Jeong, Tapan Mukerji*, and Gregoire Marithoz, Stanford University

RC 2.6 (1769–1773)

Single loop inversion of facies from seismic data using sequential simulations and probability perturbation method

Dario Grana*, Tapan Mukerji, and Jack Dvorkin, Stanford University

RC 2.7 (1774–1778)

Seismic characterization in the Nile Delta offshore combining rock physics templates and probabilistic classification

Alessandro Amato del Monte*, Antonio Corrao, Massimo Fervari, and Dario Grana, Eni E&P

RC 2.8 (1779–1783)

Importance of geological prior and rock physics in quantitative seismic interpretation for exploration: A turbidite case study

Ezequiel F. Gonzalez*, Stephane Gesbert, and Ronny Hofmann, Shell International Exploration and Production

Fractures

RC 3.1 (1784–1788)

Interpretation and detection of fracture zones by multiseismic attributes

Jianguo Yan*, Zhou Zhao, Xiaotao Wen, Xiang Rong Tang, and Wen Gu, Chengdu University of Technology, Ministry of Education, China

RC 3.2 (1789–1793)

Closure stress gradient estimation of the Marcellus Shale from seismic data

Joel Starr*, EQT Production

RC 3.3 (1794–1798)

Developing templates for integrating quantitative geophysics and hydraulic fracture completions data: Part I - Principles and theory

Marco Perez*, David Close, Bill Goodway, and Greg Purdue, Apache Canada Ltd.

RC 3.4 (1799–1803)

Sensitivity study of fracture parameters in a carbonate oil reservoir

Mohammed Alhussain*, Kyle T. Spikes, and Mrinal K. Sen, University of Texas at Austin

RC 3.5 (1804–1808)

Effect of in-situ stress and stresses state conditions on fractured and unfractured, homogeneous and laminated rocks permeability

Naif B. Alqahtani*, Mufarreh M. Tale, and Abdulrahman A. Al-Qurishi, King Abdulaziz City for Science and Technology (KACST)

RC 3.6 (1809–1813)

Double-beam stacking to infer seismic properties of fractured reservoirs

Yingcai Zheng*, Xinding Fang, Mike Fehler, and Daniel Burns, MIT

RC 3.7 (1814–1818)

An integrated approach for fracture characterization and prediction using FMI logs, poststack seismic attributes and prestack anisotropy: A case study in Tishrine West Oilfield, Northeast Syria

Jian Yang, Xuemin Gou, Nabil Hilmi, and Rick Xia, Oudeh Petroleum Company; Xiangyang Sun, Peng Li*, Qiang Wu, and Hua Liu, LandOcean Energy Services Co., Ltd.

RC 3.8 (1819–1824)

Estimation of fracture compliance from tube waves generated at a fracture intersecting a borehole

Sudhish K. Bakku*, Michael Fehler, and Daniel R. Burns, MIT

Methods and Interpretation I

RC 4.1 (1825–1829)

Broadband seismic: The ultimate input for quantitative interpretation?

Cyrille Reiser*, Euan Anderson, Yermek Balabekov, and Folke Engelmark, Petroleum Geo-Services

RC 4.2 (1830–1834)

Channel and fracture indicators from narrow-band decomposition at Dickman field, Kansas

Johnny Seales*, Tim Brown, and Christopher Liner, University of Houston

RC 4.3 (1835–1839)

Estimation of quality factor Q from prestack CMP records using EPIFVO analysis

Jing Zhao* and Jinghuai Gao, Xi'an Jiaotong University; Da Xing Wang and Mengli Zhang, Research Institute of E&D, Changqing Oil-Field Company of CNPC

RC 4.4 (1840–1844)

Integrated geophysics and geomodeling workflows for reservoir characterization: A case study of waterflood optimization

David Close* and Francisco Caycedo, Apache Canada Ltd

RC 4.5 (1845–1849)

Detecting carbonate-karst reservoirs using the directional amplitude gradient difference technique

Chen Maoshan*, Zhan Shifan, Wan Zhonghong, Zhang Hongying, and Li Lei, BGP, CNPC

RC 4.6 (1850–1854)

Automatic geological body identification using the modified rival penalized competitive learning clustering algorithm

Zhan Shifan*, Li Lei, Xiong Wei, and Wan Zhonghong, BGP, CNPC

RC 4.7 (1855–1860)

Estimation of interval velocity and attenuation anisotropy from reflection data at the Coronation Field

Jyoti Behura, Colorado School of Mines, BP Americas, Houston; Ilya Tsvankin, Colorado School of Mines; Edward Jenner and Alex Calvert, ION Geophysical, Maersk Oil, Denmark

RC 4.8 (1861–1865)

Inverse continuous wavelet transform "Deconvolution"

Marcilio Castro de Matos*, Sismo Research & Consulting, AASPI/OU; Kurt J. Marfurt, The University of Oklahoma

Methods and Interpretation II

RC 5.1 (1866–1870)

The integrated interpretation of reservoir simulation and seismic data: A case study

Cai Yintao*, Ling Yun, Guo Xiangyu, and Zhang Feng, BGP, CNPC

RC 5.2 (1871–1875)

Integrated workflow for the development of a calibrated coupled geomechanical flow simulator for unconventional reservoirs

Simon Emsley*, Ikon Science Ltd; Ebrahim Zadeh and Michel Kemper, Ikon Science AP Ltd

RC 5.3 (1876–1881)

Advanced dipole borehole acoustic processing: Rock physics and geomechanics applications

Javier Franquet*, Doug Patterson, and Daniel Moos, Baker Hughes

RC 5.4 (1882–1886)

Surface-to-borehole TEM for reservoir monitoring

Azizuddin Abdul Aziz*, University of Houston; Kurt Strack, KMS Technologies Inc., Mahidol University; Tilman Hanstein, KMS Technologies Inc

RC 5.5 (1887–1891)

3D petrophysical modeling using complex seismic attributes and limited well log data

Mehdi Eftekharifar* and De-Hua Han, University of Houston

RC 5.6 (1892–1896)

Comparison of a vertical electric and a vertical magnetic source for cross well CSEM monitoring of CO₂ injection

Brett Harris* and Andrew Pethick, Curtin University

RC 5.7 (1897–1902)

Structural joint inversion of AVO and CSEM data using flexible representations

Martha Lien*, Uni CIPR; Trond Mannseth, Uni CIPR, University of Bergen, Norway

RC 5.8 (1903–1907)

3D reservoir characterization of a North Sea oil field using quantitative seismic & CSEM interpretation

Jan Petter Morten* and Friedrich Roth, EMGS; David Timko and Constantin Pacurar, Fugro-Jason; Anh Kiet Nguyen and Per Atle Olsen, Statoil

Attribute Applications I

RC P1.1 (1908–1912)

Curvature-fracture relations in clay experiments

Evan Staples* and Kurt J. Marfurt, University of Oklahoma

RC P1.2 (1913–1917)

PSO-based multiattribute dynamic clustering technology and its application

Liu Xingfang, Zheng Xiaodong, Xu Guangcheng, Yang Hao, and Song Jianyong, Research Institute of Petroleum Exploration and Development, Petrochina

RC P1.3 (1918–1922)

Reservoir evaluation for carbon sequestration at Dickman Field, Kansas

Son Phan* and Mrinal K. Sen, The University of Texas at Austin

RC P1.4 (1923–1927)

Thickness estimation using gradient of spectral amplitude from spectral decomposition

Tri Wuri Asri Sulistyoti*, Lita Novitasari, and Sonny Winardhi, Bandung Institute of Technology

RC P1.5 (1928–1932)

Detection of a viscoelastic inclusion using spectral attributes of the quasi-stationary seismic surface response

M. A. Lambert* and E. H. Saenger, ETH Zurich, Spectraseis; B. Quintal, ETH Zurich; S. M. Schmalholz, University of Lausanne

RC P1.6 (1933–1937)

Application of fluid elastic impedance inversion in QHD area of Bohai Sea

Jun Wang, Donghong Zhou, and Zhongqiao Zhang, China National Offshore Oil Corporation (CNOOC) Ltd.; Shixin Zhang, China University of Petroleum

RC P1.7 (1938–1942)

Correlation of AVO inversion methods with porosity seen on logs and cores: A case study for Mississippian chert reservoir of Oklahoma, USA

Malleswar Yenugu and Kurt J. Marfurt, University of Oklahoma; Charles Wickstrom and Shane Matson, Spyglass Energy

RC P1.8 (1943–1948)

Utilizing waveform segmentation and gas chimney detection to distinguish productive and nonproductive reservoirs in the deep, geopressured Miocene play: Grand Bay Field, Louisiana

Andy Clifford*, Saratoga Resources; David Connolly, dGB Earth Sciences

Attribute Applications II

RC P2.1 (1949–1952)

Fracture characterization based on analysis of frequency attenuation anisotropy

Li Mei*, Chengdu Technology University, LandOcean Energy Services Co.; Shi Zejin, Chengdu Technology University; Yang Shaoguo and Yang Tao, Land-Ocean Energy Services Co.; Huang Ling, Research Institute of JiLin Oil Field Branch Company, PetroChina

RC P2.2 (1953–1957)

Seismic characterization of fractured reservoirs: A resolution matrix approach

Mehdi Eftekharifar*, University of Houston; Colin M. Sayers, Schlumberger

RC P2.3 (1958–1962)

Hydrocarbon detection using adaptive selected spectrum attenuation

Lingling Wang* and Jinghuai Gao, Xian Jiaotong University; Bin Weng and Xiudi Jiang, Research Center of CNOOC

RC P2.4 (1963–1967)

Fast probabilistic inversion of seismic attributes for petrophysical parameters

Mohammad Shahraeeni* and Andrew Curtis, University of Edinburgh; Gabriel Chao, Total E&P UK

RC P2.5 (1968–1972)

3D seismic attribute optimization technology and application for dissolution caved carbonate reservoir prediction

Lifeng Liu*, Sam Zandong Sun, Haiyang Wang, Lab for Integration of Geology and Geophysics (LIGG), China University of Petroleum (Beijing); Haijun Yang, Jianfa Han, and Bing Jing, Tarim Oilfield Co., CNPC

RC P2.6 (1973–1977)

Value of instantaneous-frequency spikes in thin-bed and stratigraphic interpretation

Hongliu Zeng*, Bureau of Economic Geology, University of Texas at Austin

RC P2.7 (1978–1983)

Rock formation characterization for CO₂-EOR and carbon geosequestration: 3D seismic amplitude and coherency anomalies, Wellington Field, Kansas, USA

Derek Ohl* and Abdelmoneam Raef, Kansas State University; Lynn Watney and Saibal Bhattacharya, Kansas Geological Survey

RC P2.8 (1984–1988)

Parameter estimation for a variable density hydrodynamic model of the Gippsland Basin in Australia using wireline logs and seismic inversion

Sunil Varma*, Bozkurt Ciftci, Sanjeev Rajput, Karsten Michael, and Elise Bekele, Commonwealth Scientific and Industrial Research Organization; Geoff O'Brien and Peter Tingate, Victoria Department of Primary Industries

Techniques

RC P3.1 (1989–1993)

GLCM parameters of channel texture analysis

Zhiguo Wang* and Cheng Yin, Southwest Petroleum University, Chengdu, China; Wei Zhao, CNOOC Research Center, Beijing, China

RC P3.2 (1994–1998)

Seismic response analysis of fractured-cavernous reservoirs in the central Tarim basin

Hanming Gu, Jiao Xue*, Yingyue Zhao, and Chengguo Cai, China University of Geosciences

RC P3.3 (1999–2003)

Effect of the conductivity in the dissipation of acoustical propagations through porous media

Luiz Pompeo-Neto*, Osvaldo V. Trevisan, and Euclides J. Bonet, University of Campinas (Unicamp), Brazil

RC P3.4 (2004–2008)

Predicting permeability from well log data and core measurements using support vector machines

Siamak Nazari* and James W. Rector III, University of California, Berkeley; Heidi A. Kuzma, East Donner Research LLC

RC P3.5 (2009–2013)

Gas prediction in sand-shale interbeds by prestack simultaneous inversion

Liang Yan, Zhang Zhongping, Zhang Zhensheng, and Wu Na, BGP, CNPC

RC P3.6 (2014–2018)

Effects of offset-depth ratio on fracture detection: A physical modeling study

Zhiheng Yin, Xiangyang Li, Bangrang Di, Jianxin Wei, and Sihai Zhang, China University of Petroleum

RC P3.7 (2019–2023)

Application of 3D modeling technique to reservoir prediction within complex fault-block oil field

Yao Shengli*, Zhang Zhiqiang, Li Tinghui, and Yang Anyuan, BGP, CNPC

RC P3.8 (2024–2028)

A new reservoir prediction method: PCA value-weighted attribute optimization

Lifeng Liu*, Sam Zandong Sun, Haiyang Wang, Lab for Integration of Geology and Geophysics (LIGG), China University of Petroleum (Beijing); Haijun Yang, Jianfa Han, and Bing Jing, Tarim Oilfield Co., CNPC

Diverse Studies

RC P4.1 (2029–2033)

Direct inversion of differenced seismic reflection data for time-lapse structural changes

K. A. Innanen, M. Naghizadeh, University Calgary, CREWES; S. T. Kaplan, ConocoPhillips

RC P4.2 (2034–2038)

Depth imaging in a marine HRDZ and reef effected area: A case history

Guo Mengqiu* and Zhang Wei, LandOcean Energy Services Co. Ltd; Zuo Shengjie, Sinopec Oil & Gas Australia Pty Ltd

RC P4.3 (2039–2043)

Imaging using the ambient wave field; Low-frequency seismic imaging of an unproduced oil reservoir in Egypt

Brad Birkelo* and Ben Witten, Spectraseis

RC P4.4 (2044–2048)

Geophysical software ergonomics: Methods for effective evaluation

S. Camille Peres and Magdy Akladios, University of Houston-Clear Lake; Philip Kortum, Rice University; Andrew Muddimer*, Schlumberger; Sam Napit, ExxonMobil

RC P4.5 (2049–2053)

Analysis of the seismic response of an anisotropic viscoelastic reservoir

Zhiqi Guo*, British Geological Survey, Jilin University; Xiangyang Li, British Geological Survey

RC P4.6 (2054–2058)

Multi-geometry SAR interferometry for CO₂ sequestration monitoring

Alessio Rucci*, Alessandro Ferretti, Fabrizio Novali, and Andrea Tamburini, TRE – Tele Rilevamento Europa; D. W. Vasco, Lawrence Berkeley National Laboratory

RC P4.7 (2059–2063)

Effects of microporosity on permeability and sonic velocity of miocene carbonates and an approach to relate micrite microtextures with microporosity occurrences in miocene carbonate reservoirs of offshore Sarawak, Malaysia

Md. Habibur Rahman* and Bernard J. Pierson, South-East Asia Carbonate Research Laboratory(SEACARL), University Teknologi PETRONAS, Malaysia

RC P4.8 (2064–2068)

Delineating the gas reservoir with the C-wave diodic effect correction in Qaidam Basin, Northwest China

Sihai Zhang*, Xiaoming Li, and Zhiheng Yin, China University of Petroleum; Hengchang Dai, British Geological Survey; Xiang-Yang Li, China University of Petroleum, British Geological Survey

Numerical Modeling

RP 1.1 (2069–2073)

Building a seismic-driven 3D geomechanical model in a deep carbonate reservoir

Mita Sengupta*, Jianchun Dai, Stefano Volterrani, and Nader Dutta, Western-Geco; Narhari Srinivas Rao, Bashar Al-Qadeeri, Vijaya Kumar Kidambi, Kuwait Oil Company

RP 1.2 (2074–2078)

A diagenetic rock model for exploration

Anders Dræge*, Statoil ASA

RP 1.3 (2079–2083)

Pore-shape and composition effects on rock-physics modeling in the Haynesville Shale

Meijuan Jiang* and Kyle Spikes, University of Texas at Austin

RP 1.4 (2084–2088)

Memory of rocks: How burial history controls present day seismic properties. Example from Troll East, North Sea

Per Avseth*, Odin Petroleum, Norway; Anders Dræge, Statoil

RP 1.5 (2089–2093)

S-wave attenuation caused by wave-induced fluid flow

Beatriz Quintal* and Marcel Frehner, ETH Zurich; Holger Steeb, Ruhr-U Bochum; Stefan M. Schmalholz, University of Lausanne

RP 1.6 (2094–2098)

Density estimate from well log data using a diagenetic rock model

Marcelo Benabentos*, Repsol Services USA; John Castagna, University of Houston

RP 1.7 (2099–2102)

Extracting attributes from model to seismic: Sichuan Basin Example, Oolitic Limestone Reservoir

Mei Li*, Chengdu University of Technology; *Yijie Zhan, Shaoguo Yang, Yihong Pan, and Yi Li, LandOcean Energy Services Co., Ltd.; Zejin Shi, Chengdu University of Technology

RP 1.8 (2103–2107)

Rock physics analysis of deepwater sediments, West Africa

Mosab Nasser* and Gary Ostroff, Maersk Oil Houston Inc.; Gary Mavko and Jack Dvorkin, Rock Physics Group

Laboratory and Computational Methods

RP 2.1 (2108–2113)

CO₂ sequestration in basalt: Carbonate mineralization and fluid substitution

Ludmila Adam*, Thomas Otheim, and Kasper van Wijk, Boise State University; Michael Batzle, Colorado School of Mines; Travis L. McLing and Robert K. Podgorney, Idaho National Laboratory

RP 2.2 (2114–2118)

Further developments in measurement of low-frequency seismic attenuation in laboratory

Claudio Madonna and Nicola Tisato*, ETH Zurich; Claudio Delle Piane, CSIRO; Erik H. Saenger, ETH Zurich, Spectraseis

RP 2.3 (2119–2123)

Differentiating chemical effects and pressure effects on the elastic properties of the Lower Tuscaloosa sandstone in Cranfield, Mississippi by injecting carbon dioxide rich brine

Corey Joy* and Mrinal K. Sen, The University of Texas at Austin; Tiziana Vanorio, Stanford Rock Physics Laboratory

RP 2.4 (2124–2129)

Computing rock physics trends using sandstone micro-CT images and digital mineral precipitation

Fabian Krzikalla* and Tiziana Vanorio, Stanford University; Ratnanabha Sain, ExxonMobil Upstream Research Company

RP 2.5 (2130–2134)

Laboratory measurements of ultrasonic P-wave and S-wave attenuation in partially frozen unconsolidated sediments saturated with brine

Jun Matsushima*, Makoto Suzuki, Yoshibumi Kato, and Shuichi Rokugawa, The University of Tokyo

RP 2.6 (2135–2139)

Rock physics and petrophysics testing of shales from the Canning Basin, Western Australia

Claudio Delle Piane, Lionel Esteban, David Dewhurst*, and Ben Clennell, CSIRO Earth Science and Resource Engineering; Mark Raven, CSIRO Land and Water

RP 2.7 (2140–2144)

Digital rock physics: Effect of fluid viscosity on effective elastic properties

E. H. Saenger*, ETH Zurich, Spectraseis; H. Steeb, RU Bochum

RP 2.8 (2145–2149)

Uniaxial stress and ultrasonic anisotropy in a layered orthorhombic medium

Bode Omoboya*, Nikolay Dyaur, and Robert R. Stewart, University of Houston; J. J. S de Figueiredo, Unicamp-Brazil, University of Houston

Attenuation, Dispersion, and Fluids

RP 3.1 (2150–2154)

Viscosity scaling of wave attenuation mechanisms in porous rocks: Theory and numerical simulations

Tobias M. Muller, CSIRO Earth Science and Resource Engineering, Perth; Erik H. Saenger*, ETH Zurich, Spectraseis; Pratap N. Sahay, CICESE Department of Seismology, Ensenada, Mexico

RP 3.2 (2155–2160)

Bounds for seismic dispersion and attenuation in poroelastic rocks

Boris Gurevich*, Curtin University, CSIRO Earth Science and Resource Engineering; Dina Makarynska, Curtin University; Osni de Paula, Curtin University, Petrobras

RP 3.3 (2161–2165)

Fluid substitution in gas/water systems: Revisiting patchy saturation

Amrita Sen* and Jack Dvorkin, Stanford University

RP 3.4 (2166–2170)

Seismic attenuation in heterogeneous partially saturated rocks

J. German Rubino* and Klaus Holliger, University of Lausanne

RP 3.5 (2171–2176)

Effective medium modeling of fluid-filled fractured-porous medium

Ranjana Ghosh* and Mrinal K. Sen, University of Texas at Austin

RP 3.6 (2177–2182)

Influence of pore fluid and frequency on elastic properties of greensand as interpreted using NMR data

Zakir Hossain* and Ida L. Fabricius, Technical University of Denmark; Tapan Mukerji, Stanford University

RP 3.7 (2183–2187)

Fluid substitution for laminated sand-shale sequences

Piyapa Dejtrakulwong* and Gary Mavko, Stanford University

RP 3.8 (2188–2193)

Asymptotic Biot's model for estimation of seismic attenuation in porous layered medium

Elmira Chabyshova* and Gennady Goloshubin, University of Houston

Anisotropy, Fractures, and Stress

RP 4.1 (2194–2199)

Mindlin's friction term and implications for shear modulus and anisotropy in granular media

Kenneth Duffaut*, Martin Landrø, Roger Sollie, and Ørjan Pedersen, Statoil ASA, Norwegian University of Science and Technology

RP 4.2 (2200–2205)

Role of microheterogeneities on fabric, stress, and elastic anisotropy in granular media

Ratnanabha Sain*, ExxonMobil Upstream Research Company, Houston; Tapan Mukerji and Gary Mavko, Stanford University

RP 4.3 (2206–2210)

Elastic scattering by planar fractures

Thomas E. Blum* and Kasper van Wijk, Boise State University; Roel Snieder, Colorado School of Mines; Mark E. Willis, ConocoPhillips

RP 4.4 (2211–2215)

Analysis of mesoscopic loss effects in anisotropic poroelastic media using harmonic finite element simulations

Juan E. Santos*, CONICET, Facultad de Ciencias Astronomicas y Geofisicas, Universidad Nacional de La Plata, Purdue University; Jose M. Carcione and Stefano Picotti, Istituto Nazionale di Oceanografia e di Geofisica Sperimentale - OGS, Italy

Measurements and Applications

RP P1.1 (2236–2240)

Laboratory measurements of modulus dispersion in sandstone at seismic frequencies

Gregory N. Boitnott*, New England Research, Inc.; Michael K. Broadhead and Timothy H. Keho, Saudi Aramco

RP P1.2 (2241–2245)

Tight shale elastic properties using the soft-porosity and single aspect ratio models

Franklin Ruiz and Ilgar Azizov, RSI

RP P1.3 (2246–2250)

Quantitative DC and high frequency AC seismoelectric measurement on Berea sandstone

Xin Zhan*, ExxonMobil Upstream Research Company; Zhenya Zhu and M. Nafi Toksöz, MIT

RP P1.4 (2251–2255)

Theoretical validation of fluid substitution by Hashin-Shtrikman bounds

Fuyong Yan* and De-hua Han, University of Houston

RP 4.5 (2216–2220)

Approximate Eshelby tensor for transversely isotropic media

Yaping Zhu* and Enru Liu, ExxonMobil Upstream Research Company

RP 4.6 (2221–2225)

Mechanical compaction in heterogeneous clastic formations from plastic-poroelastic deformation principles: Theory and modeling results

Ran Bachrach, WesternGeco, Tel Aviv University

RP 4.7 (2226–2230)

Fracture intersections and interface waves

Laura J. Pyrak-Nolte, Bradley C. Abell, and Fan Wu, Purdue University

RP 4.8 (2231–2235)

Pressure-dependent seismic velocities based on unified asperity-deformation model

Kai Gao* and Richard L. Gibson Jr., Texas A&M University

RP P1.5 (2256–2260)

A low-frequency laboratory apparatus for measuring elastic and anelastic properties of rocks

V. Mikhaltsevitch, M. Lebedev*, and B. Gurevich, Curtin University

RP P1.6 (2261–2265)

Facies uncertainty in petrophysical forward function: A West Africa offshore field example

Mohammad Shahraeni* and Andrew Curtis, University of Edinburgh

RP P1.7 (2266–2271)

Quantitative inversion of carbonate secondary pore structure using rock physics model

Sam Zandong Sun, Zhishui Liu*, and Haiyang Wang, Lab for Integration of Geology and Geophysics (LIGG), China University of Petroleum (Beijing); Haijun Yang, Tarim Oilfield Company, CNPC

RP P1.8 (2272–2276)

Fluid substitution in tight shale using the soft-porosity model

Franklin Ruiz and Ilgar Azizov, RSI

Measurements and Modeling

RP P2.1 (2277–2281)

Low frequency measurements of seismic wave attenuation in Berea sandstone

Nicola Tisato* and Claudio Madonna, ETH Zurich; Brad Artman, Spectraseis; Erik H. Saenger, ETH Zurich & Spectraseis

RP P2.2 (2282–2286)

Seismic monitoring of permeability reduction due to biopolymer formation in unconsolidated materials

Tae-Hyuk Kwon and Jonathan B. Ajo-Franklin, Lawrence Berkeley National Laboratory

RP P2.3 (2287–2291)

Seismic signature of a patchy saturation and its implications to time-lapse monitoring of carbon-sequestered deep saline reservoirs

Amit Padhi*, Subhashis Mallick, Pradip K. Mukhopadhyay, Hamid Behzadi, and Vladimir Alvarado, University of Wyoming

RP P2.4 (2292–2296)

Stress-dependent seismic dispersion in fluid-saturated granular media

Ranajit Ghose and Alimzhan Zhubayev*, Delft University of Technology

RP P2.5 (2297–2301)

Elastic moduli of sandstones saturated with a range of pore fluids correlated with kinematic viscosity and frequency ratio

Morten Kanne Sørensen* and Ida Lykke Fabricius, Technical University of Denmark

RP P2.6 (2302–2307)

Velocity-density relations for deepwater subsalt Gulf of Mexico shales

Colin M. Sayers* and Lennert D. den Boer, Schlumberger

RP P2.7 (2308–2312)

Maturity characterization and ultrasonic velocities of coals

Feisal Dirgantara*, Michael L. Batzle, and John B. Curtis, Colorado School of Mines

RP P2.8 (2313–2318)

Stress dependency of elastic properties of shales: The effect of uniaxial stress

Marina Pervukhina and David N. Dewhurst, CSIRO Earth Science and Resource Engineering, ARRC, Australia; Boris Gurevich and Pavel Golodoniuc, CSIRO Earth Science and Resource Engineering, ARRC, Australia and Curtin University

Caribbean Petroleum Systems

SGS 1.1 (2319–2323)

Land seismic acquisition in the Southern Caribbean: A Trinidad case study

Sean Cardinez* and Victor Young On, Petrotrin Exploration and Geophysics

SGS 1.2 (2324–2325)

The 2011 Trinidad offshore bid round: Results and expectations for future exploration

Helena Innis-King, Ministry of Energy and Energy Affairs, International Water-front Centre

SGS 1.3 (2326–2327)

The key source rocks systems in Jamaica by recourse to biomarker data and continental reconstruction models

C. J. Matchette-Downes, MDOIL Limited

SGS 1.4 (2328–2333)

Major hydrocarbon plays in the Mexican sector of the Gulf of Mexico, the Caribbean, and northern South America

Paul Mann*, University of Texas at Austin; Alejandro Escalona, University of Stavanger

North America

SGS 2.1 (2334–2338)

Regional integrated interpretation, central north Gulf of Mexico

L. Bornatici, WesternGeco

SGS 2.2 (2339–2343)

A geophysical health-check for the past decade in North America

J. P. Blangy*, Hess Corporation

SGS 2.3 (2344–2347)

Geomagnetic field models for exploration and directional drilling

S. Maus* and C. Manoj, CIRES, University of Colorado and NOAA's National Geophysical Data Center

SGS 2.4 (2348–2349)

Role of anisotropy on deformation and dispersion characteristics in unconventional reservoirs

Azra N. Tutuncu, Colorado School of Mines

SGS 2.5 (2350–2351)

Imaging the roots of the Rocky Mountains: The EarthScope Bighorn Project

Anne Sheehan, University of Colorado at Boulder

SGS 2.6 (2352–2353)

Predicting natural fractures in the tight Nordegg gas sandstone of West Central Alberta using azimuthal Fourier coefficients

Jon Downton*, Benjamin Roure, Hampson Russell, Canada; Lee Hunt, Scott Reynolds, and Scott Hadley, Fairborne Energy Ltd

FWI Applications

SI 1.1 (2354–2358)

Integrating 3D full waveform inversion into depth imaging projects

Laurent Sirgue*, Bertrand Denel, and Fuchun Gao, Total

SI 1.2 (2359–2363)

True amplitude imaging of ocean bottom cable data by Gaussian beams based weighted summation

M. P. Kutovenko, M. I. Protasov, and V. A. Cheverda, Institute of Petroleum Geology and Geophysics SD RAS

SI 1.3 (2364–2368)

Variable-depth streamer acquisition: Broadband data for imaging and inversion

Robert Soubaras* and Yves Lafet, CGGVeritas

SI 1.4 (2369–2373)

Least-squares reverse time migration/inversion for ocean bottom data: A case study

Mandy Wong*, Shuki Ronen, and Biondo Biondi, Stanford University

SI 1.5 (2374–2378)

Full-waveform inversion application in different geological settings

Denes Vigh*, Jerry Kapoor, and Hongyan Li, WesternGeco

SI 1.6 (2379–2383)

Prestack full waveform inversion of tight gas sand reservoirs of Xujiache formation in Northeast Sichuan Basin, China

Aifei Bian* and Wenhui Yu, China University of Geosciences, Wuhan

SI 1.7 (2384–2388)

Full waveform inversion: A North Sea OBC case study

Andrew Ratcliffe*, Caroline Win, Vetle Vinje, and Graham Conroy, CGGVeritas; Mike Warner, Adrian Umpleby, Ivan Stekl, and Tenice Nangoo, Imperial College London; Alexandre Bertrand, ConocoPhillips

SI 1.8 (2389–2394)

Hierarchical waveform inversion with double beamforming

Romain Brossier and Philippe Roux, Universite Joseph Fourier, CNRS

FWI Theory I

SI 2.1 (2395–2400)

2.5D forward and inverse modeling of elastic full-waveform seismic data

J. Xiong*, A. Abubakar, Y. Lin, and T. M. Habashy, Schlumberger-Doll Research

SI 2.2 (2401–2405)

A projected Hessian matrix for full waveform inversion

Yong Ma* and Dave Hale, Colorado School of Mines

SI 2.3 (2406–2410)

Multiparameter material model and source signature full waveform inversion

Volkan Akcelik*, Huseyin Denli, Alex Kanevsky, Kinesh K. Patel, Laurent White, and Martin-Daniel Lacasse, ExxonMobil Research and Engineering Company

SI 2.4 (2411–2417)

Source-receiver compression approach for 3D full-waveform inversion with an iterative forward solver

A. Abubakar*, T. M. Habashy, G. Pan, and A. Belani, Schlumberger

SI 2.5 (2418–2422)

A blocky regularization scheme for full waveform inversion

Antoine Guitton*, Geolmaging Solutions Inc.

SI 2.6 (2423–2427)

Random-beam full-wavefield inversion

Nathan Downey, Partha Routh, and Young Ho Cha, ExxonMobil Upstream Research Company

SI 2.7 (2428–2432)

Improving the convergence rate of full wavefield inversion using spectral shaping

Spyros Lazaratos*, Ivan Chikichev, and Ke Wang, ExxonMobil Upstream Research Company

SI 2.8 (2433–2438)

Encoded simultaneous source full-wavefield inversion for spectrally shaped marine streamer data

Partha Routh*, Jerry Krebs, Spyros Lazaratos, Anatoly Baumstein, Sunwoong Lee, Young Ho Cha, Ivan Chikichev, Nathan Downey, Dave Hinkley, and John Anderson, ExxonMobil Upstream Research Company, Houston

FWI Theory II

SI 3.1 (2439–2443)

Full waveform inversion with reflection energies

Bin Gong* and Yunqing Shen, ConocoPhillips Company; Yong Ma, Colorado School of Mines

SI 3.2 (2444–2448)

Wavelet estimation and multiple modeling in full wavefield inversion

Ke Wang*, Spyros Lazaratos, and Ivan Chikichev, ExxonMobil Upstream Research Company, Houston

SI 3.3 (2449–2453)

Toward broadband nonlinear full-waveform inversion with the help of shot/receiver refocusing

Peter Haffinger*, Dries Gisolf, and Peter van den Berg, Delft University of Technology

SI 3.4 (2454–2458)

Full waveform inversion using wave-equation depth migration with tying to wells

Gary F. Margrave*, Robert J. Ferguson, and Chad M. Hogan, CREWES, University of Calgary

SI 3.5 (2459–2464)

Multiscale time-domain full-waveform inversion for anisotropic elastic media

Olga Podgornova* and Marwan Charara, Schlumberger Moscow Research

SI 3.6 (2465–2470)

Acoustic VTI full waveform inversion: Sensitivity analysis and realistic synthetic examples

Y. Gholami, Stephane Operto, and A. Ribodetti, Géoazur, CNRS, Université Nice Sophia-Antipolis; R. Brossier and Jean Virieux, ISTerre, Université Joseph Fourier

SI 3.7 (2471–2475)

Full waveform inversion: A diffuse optical tomography point of view

Sunyoung Park and Changsoo Shin, Seoul National University; Maarten V. de Hoop, Purdue University; Henri Calandra, TOTAL

SI 3.8 (2476–2481)

A discussion on the advantages of phase-only waveform inversion in the Laplace-Fourier domain: Validation with marine and land seismic data

Rie Kamei*, Andrew J. Brenders, and R. Gerhard Pratt, University of Western Ontario

Time-lapse and CO₂ Sequestration Applications

SI 4.1 (2482–2486)

Sensitivity analysis of time-lapse images obtained by differential waveform inversion with respect to reference model

Amir Asnaashari*, Romain Brossier, Stephane Garambois, and Jean Virieux, Université Joseph Fourier, CNRS; Francois Audebert and Pierre Thore, TOTAL E&P

SI 4.2 (2487–2491)

Prediction method research on reservoir of Diabase Alteration Zone in Huanghua Depression

Jun Yao*, Shuangwen Li, Huaqing Liu, and Changkuan Ni, Northwest Branch of Research Institute of Petroleum Exploration and Development, PetroChina

SI 4.3 (2492–2496)

Time-lapse seismic elastic impedance difference inversion and application

Jingye Li*, Shoudong Wang, and Xiaohong Chen, China University of Petroleum

SI 4.4 (2497–2501)

Time-lapse prestack elastic impedance inversion based on seismic difference data

Zhu Zhenyu*, Jiang Xiudi, and Zhao Wei, CNOOC Research Institute; Wang Shoudong, China University of Petroleum, Beijing

SI 4.5 (2502–2506)

Quantitative characterization of CO₂-bearing thin layers at the Sleipner field using spectral inversion

Daniilo R. Velis, Universidad Nacional de La Plata; J. German Rubino, University of Lausanne

SI 4.6 (2507–2511)

Prestack inversion of wide incident angle seismic data

Wang Yu-mei, Wang Xi-ping*, Meng Xian-jun, and Niu Xue-min, Geophysical Research Institute of Shengli Oilfield, Sinopec

SI 4.7 (2512–2516)

Inversion of Love wave phase velocity, group velocity, and shear-stress ratio using finite elements

Matthew Haney, Boise State University; Huub Douma*, ION Geophysical, GXT Imaging Solutions

SI 4.8 (2517–2522)

Fast stochastic inversion of marine CSEM and seismic data with the Neighbourhood Algorithm

Moritz M. Flidner*, Sven Treitel, Michael Frenkel, and Lucy M. MacGregor, RSI

FWI Computation and Applications

SI 5.1 (2523–2527)

Efficient parallel algorithms for hierarchically semiseparable (HSS) matrices: Kernel of a massively parallel structured direct Helmholtz solver

Shen Wang*, Jianlin Xia, Yingchong Situ, and Maarten V. de Hoop, Purdue University; Xiaoye Li, Lawrence Berkeley National Laboratory

SI 5.2 (2528–2533)

CUDA-based acceleration of full waveform inversion on GPU

Baoli Wang* and Jinghuai Gao, Xian Jiaotong University; Huanlan Zhang, Xian University of Science and Technology; Wei Zhao, Research Center of CNOOC

SI 5.3 (2534–2538)

Practical strategies for waveform inversion

Chao Wang*, Helen Delome, Carlos Calderon, David Yingst, Jacques Leveille, Robert Bloor, and Paul Farmer, ION Geophysical, Houston

SI 5.4 (2539–2542)

Full waveform tomography with consideration for large topography variations

Wei Zhang* and Jie Zhang, GeoTomo LLC, Houston

Miscellaneous Applications

SI 6.1 (2565–2570)

Phase variation with angle inversion using plane and spherical waves

Xinfa Zhu* and George McMechan, University of Texas at Dallas

SI 6.2 (2571–2575)

Sparse-layer inversion with basis pursuit decomposition

Rui Zhang, University of Texas at Austin; John Castagna, University of Houston

SI 6.3 (2576–2580)

Frequency-domain waveform inversion using the unwrapped phase

Yunseok Choi* and Tariq Alkhalifah, King Abdullah University of Science and Technology

SI 6.4 (2581–2585)

Spiking deconvolution: An inverse problem point of view

Ehsan Jamali Hondori*, Hitoshi Mikada, Tada-nori Goto, and Junichi Takekawa, Kyoto University; Hamid Reza Siahkoobi, University of Tehran

SI 5.5 (2543–2548)

Two-dimensional acoustic anisotropic (VTI) full waveform inversion: The Valhall case study

Y. Gholami, S. Operto, V. Prioux, and A. Ribodetti, Géoazur, CNRS, Université Nice Sophia-Antipolis; R. Brossier and J. Virieux, ISTERre Université Joseph Fourier

SI 5.6 (2549–2554)

Recovering long wavelength of the velocity model using waveform inversion in the Laplace domain: Application to field data

Henri Calandra*, Total E&P; Christian Rivera, Changsoo Shin, Sukjoon Pyun, Youngseo Kim, and Wansoo Ha, Seoul National University

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HongYan Li, Denes Vigh, and Jerry Kapoor, WesternGeco

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Frequency-domain homotopy inversion using the perturbation theory

Sangmin Kwak*, Youngseo Kim, and Changsoo Shin, Seoul National University; Sukjoon Pyun, Inha University

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Thin-bed reflectivity inversion based on matching pursuit

Yang Hao*, Zheng Xiaodong, and Li Jinsong, Research Institute of Petroleum Exploration and Development, PetroChina Limited Company; Ma Shufang, Research Institute, China National Offshore Oil Corporation

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Image-domain waveform tomography with two-way wave-equation

Tongning Yang* and Paul Sava, Colorado School of Mines

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Resolution analysis for full wavefield inversion and its application to time-lapse

Xiaolei Song, University of Texas at Austin; Anatoly Baumstein and Partha Routh, ExxonMobil Upstream Research Company, Houston

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Brahim Abbad*, IPT, NTNU, Trondheim, Statoil; Bjørn Ursin, IPT, NTNU, Trondheim

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Anubрати Mukherjee*, Sagnik Dasgupta, Zhao Chun Duan, Han Xiao Li, and Liu Wei, DCS, Schlumberger, China; Zhang Yan, Gan Lideng, and Zhang Xin RIPED, PetroChina

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Manuel Queißer* and Satish Singh, Laboratoire de Géosciences Marines, IPG Paris

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Rui Zhang, Mrinal K. Sen, and Sanjay Srinivasan, The University of Texas Austin

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Vincent Clochard, Michel Léger, and Nicolas Delépine*, IFP Energies Nouvelles, Rueil-Malmaison, France

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Aliya Urazimanova*, Kurt J. Marfurt, and Jean-Claude Roegiers, University of Oklahoma

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Ammanuel Woldearegay*, Priyank Jaiswal, and Alexander Simms, Oklahoma State University

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Jiajia Sun* and Yaoguo Li, Colorado School of Mines

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André Bulcão, Djalma Manoel Soares Filho*, Gustavo Catão Alves, Luiz Alberto Santos, and Túlio do Valle Moreira, PETROBRAS; Peter van den Berg, and Dries Gisolf, Delft University of Technology

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Woodon Jeong, Dong-Joo Min, and Gyu-hwa Lee*, Seoul National University; Ho-Yong Lee, Korea National Oil Company

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Ho Seuk Bae*, Wookeon Chung, Seung-Goo Kang, and Changsoo Shin, Seoul National University; Sukjoon Pyun, Inha University

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Aleksandr Aravkin, Tristan van Leeuwen, and Felix Herrmann, University of British Columbia, Vancouver

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Dorian Caraballo L.*, CPGG, UFBA; Milton J. Porsani, CPGG, IGEO, UFBA, INCT-GP, CNPQ

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Seung-Goo Kang*, Ho Seuk Bae, and Changsoo Shin, Shin's Geophysics

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Heng Luo* and Huazhong Wang; Tongji University, Shanghai, China; Lixin Tian and Donghong Zhou, CNOOC China Ltd., Tianjin

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Wenyi Hu*, Jonathan Liu, Lorie Bear, and Carey Marcinkovich, ExxonMobil Upstream Research Company

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Qin Cao*, Shell Global Solutions International, Massachusetts Institute of Technology; René-Édouard Plessix, Shell Global Solutions International

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Esteban Diaz*, Geo Imaging Soluções Tecnológicas em Geociências Ltda; Antoine Guitton, Geolmaging Solutions Inc.

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Danping Cao* and Xingyao Yin, China University of Petroleum

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Andreas Atle* and Paul Williamson, TOTAL, Houston; Raphael Lençrerot, TOTAL, France

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Ray McGarry, Damir Pasalic, and Cen Ong, Acceleware Corp

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Yang Liu*, State Key Laboratory of Petroleum Resource and Prospecting, China University of Petroleum, Beijing; Mrinal K. Sen, University of Texas at Austin

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Anne-Cecile Lesage*, Headwave Inc.; Josep de la Puente and Jose M. Cela, Barcelona Supercomputing Center; Mauricio Araya-Polo and Gladys Gonzalez, Repsol

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Zhenya Zhu*, Daniel R. Burns, Michael Fehler, and Steve Brown, Earth Resources Laboratory, MIT

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G. V. Reshetova*, Institute of Computational Mathematics and Mathematical Geophysics SD RAS; V. V. Lisitsa and V. A. Tcheverda, Institute of Petroleum Geology and Geophysics SD RAS; V. A. Pozdnyakov, Siberian Federal University, "KrasNIIneft"

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Daria Tetyukhina*, Stefan M. Luthi, and Dries Gisolf, Delft University of Technology

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Jonas D. De Basabe*, Centro de Investigacion Científica y Educacion Superior de Ensenada; Mrinal K. Sen and Mary F. Wheeler, The University of Texas at Austin

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Tianrun Chen*, Michael Fehler, Xinding Fang, Xuefeng Shang, and Dan Burns, Massachusetts Institute of Technology

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Dmitry Neklyudov*, Ilya Silvestrov, and Vladimir Tcheverda, Institute of Petroleum Geology and Geophysics SB RAS

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Yang Liu*, China University of Petroleum, Beijing; Liang Ding, CNOOC Research Institute, Beijing; Mrinal K. Sen, The University of Texas at Austin

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Leandro Di Bartolo, Cleberson Dors, and Webe João Mansur, Federal Univer-sidad of Rio de Janeiro

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Jon-Fredrik Hopperstad* and Ali Özbek, Schlumberger Cambridge Research; Ralf Ferber and Massimiliano Vassallo, WesternGeco London Technology Centre

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Nadia Kreimer* and Mauricio D. Sacchi, University of Alberta

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Peter W. Cary, Sensor Geophysical Ltd.

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Mostafa Naghizadeh and Kris Inannen, University of Alberta

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Madhav Vyas*, Dave Nichols, and Everett Mobley, WesternGeco

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Thomas A. Dickens* and Graham A. Winbow, ExxonMobil Upstream Research Company

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Paul Sava, Colorado School of Mines; Tariq Alkhalifah, King Abdullah University of Science and Technology

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Jean-Philippe Montel* and Gilles Lambaré, CGGVeritas Massy France

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Bruno Kaelin*, Geo Imaging Solutions, Inc.; Carla Carvajal, Geo Imaging Soluções Tecnológicas em Geociências Ltda

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Kwangjin Yoon*, Manhong Guo, Jun Cai, and Bin Wang, TGS

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Cen Ong*, Damir Pasalic, and Ray McGarry, Acceleware Corp

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John E. Anderson* and Lijian Tan, ExxonMobil Upstream Research Company; Don Wang, ExxonMobil Information Technology Company

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Bjorn Engquist, Jack Poulson, and Lexing Ying*, The University of Texas at Austin

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Jeeun Lee*, Youngseo Kim, and Changsoo Shin, Seoul National University

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David Imbert, Institut de Physique de Rennes, Université de Rennes; Khadija Imadoueddine, ORSYP; Philippe Thierry* and Leonardo Borges, Intel Corp.; Herve Chauris, Centre de Geosciences, MinesParisTech

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Jiubing Cheng and Zaitian Ma, State Key Laboratory of Marine Geology, Tongji University

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Christof Stork, Stefan Compton, and Paul Heuermann, Landmark Software Co

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A. J. Berkhout* and D. J. Verschuur, Delft University of Technology

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Shaoping Lu*, N. D. Whitmore, A. A. Valenciano, and Nizar Chemingui, PGS

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Mark Roberts and David Shepherd, BP America Inc; Fand Shuo Ji, CGGVeritas; Micah Reasnor, BP America Inc, Pioneer Natural Resources

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Ananya Roy* and Nicolas Chazalnoel, CGGVeritas

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Wenbo Sun*, Sam Zandong Sun, Shan Jiang, Pei Yang, and Di Wang, Lab for Integration of Geology and Geophysics (LIGG), China University of Petroleum (Beijing); Chengzao Jia, CNPC; Huiwen Xie, Tarim Oilfield Co., CNPC

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Integrated approach to imaging in the offshore joint petroleum development area, Timor-Leste and Australia

T. Ciaccio*, C. Andreoletti, and R. Fichera, Eni E&P; M. Biancone and G. Ellis, Eni Australia Ltd.

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Anisotropic tomography for TTI and VTI media

Yang He* and Jun Cai, TGS

SVE 2.4 (3928–3932)

Incorporating well, rock physics, and geological information into anisotropy estimates enables a “true earth model”

Huyen Bui, Robert Hubbard, Dave Watts, Chih-Wen Kue, David Ng, and Mart Smith, WesternGeco

SVE 2.5 (3933–3937)

WATS for subsalt reservoir imaging: A case study showing the benefit of combining conventional and full-wave model building techniques with advanced postprocessing

Pierre Josselin*, Laurent Lemaistre, Séverine Lalande, and Celso Gomes, TOTAL

SVE 2.6 (3938–3942)

Depth imaging coil data: Multiazimuthal tomography earth model building and depth imaging the full azimuth Tulip coil project

Michele Buia, ENI E&P; Peter Brown and Bakhrudin Mansyur, ENI Indonesia; Michelle Tham, Suyang Chen, Swee Leng Ng, Olga Zdraveva, and Martin Bayly, WesternGeco

SVE 2.7 (3943–3947)

A case study: Improved subsalt imaging through TTI model building and imaging of a WAZ survey in the Gulf of Mexico

Cristina Reta-Tang*, Justin Simmons, Will Whiteside, Jun Cai, Roy Camp, and Yang He, TGS

SVE 2.8 (3948–3952)

Anisotropic model building in complex media: Comparing three successful strategies in deep water Gulf of Mexico

Olga Zdraveva*, Michael Cogan, Robert Hubbard, Michael O'Briain and David Watts, WesternGeco

Tomography

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Diving wave tomography: a robust method for velocity estimation in a foothills geological context

Christophe Barnes*, Universite de Cergy-Pontoise; Constantin Gerea, Francis Clement, and Jean-Marc Mougenot, TOTAL

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Subsalt velocity analysis by target-oriented wavefield tomography: A 3D field-data example

Yaxun Tang* and Biondo Biondi, Stanford University

SVE 3.3 (3964–3968)

Wave-equation-based residual moveout inversion in the subsurface angle domain for subsalt velocity model building

Sijmen Gerritsen*, Leen Roozmond, Diederik van Daalen, and Peter Bakker, Shell Global Solutions International

SVE 3.4 (3969–3973)

An improved gradient computation for adjoint wave-equation reflection tomography

Uwe Albertin, Exploration and Production Technology, BP

SVE 3.5 (3974–3978)

Velocity update using high resolution tomography in Santos Basin, Brazil

Lingli Hu and Jianhang Zhou, CGGVeritas

SVE 3.6 (3979–3983)

Hybrid tomography based on beam migration

John Sherwood, Junru Jiao*, Hans Tieman, Kevin Sherwood, Chaoguang Zhou, Sonny Lin, and Sverre Brandsberg-Dahl, Petroleum Geo-Services

SVE 3.7 (3984–3988)

Nonlinear slope tomography from RTM and Kirchhoff angle domain common-image gathers

Jean-Philippe Montel*, Gilles Lambaré, and Patrice Guillaume, CGGVeritas Massy, France

SVE 3.8 (3989–3993)

Ray-based tomography for Q estimation and Q compensation in complex media

Maud Cavalca, Ian Moore, Ling Zhang, Swee Leng Ng, Robin Fletcher, and Martin Bayly, WesternGeco

Near Surface and Complex Structure

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Velocity analysis based on rugged topography

Pan Hong-xun* and Fang Wu-bao, SINOPEC Geophysical Research Institute

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The i-stats: An image-based effective-medium modeling of near-surface anomalies

Oz Yilmaz*, GeoTomo LLC

SVE 4.3 (4005–4009)

Multidatum based estimation of near-surface full-waveform redatuming operators

Jan-Willem Vrolijk, Peter Haffinger*, and Eric Verschuur, Delft University of Technology

SVE 4.4 (4010–4014)

Dynamic statics: A practical symbiosis of velocity-statics duality

Alexander Zhukov and Ilya Korotkov, Geophysical Data Systems, Moscow; Tagir Galikeev*, Unified Geosystems

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Tradeoffs in the near-surface seismic imaging solutions

Long He* and Jie Zhang, University of Science and Technology of China; Wei Zhang, GeoTomo LLC, Houston

SVE 4.6 (4020–4024)

Dirty salt tomography using RTM 3D angle gathers

Zhengxue Li, Shuo Ji, Bing Bai, Qiaofeng Wu, and Weishan Han, CGGVeritas

SVE 4.7 (4025–4029)

Imaging the hoop fault complex via horizon and fault constrained tomography

Gary Rodriguez, Ashley Lundy, Matt Hart, Carl Lang, James Cai, Itze Chang, and Qingsheng Zhang, TGS

SVE 4.8 (4030–4034)

Detailed velocity model building in a carbonate karst zone and improving subkarst images in the Gulf of Mexico

Jun Cai*, Hao Xun, Li Li, Yang He, Zhiming Li, Shuqian Dong, Manhong Guo, and Bin Wang, TGS

Miscellaneous Approaches

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Model-building with image segmentation and fast image updates

Adam D. Halpert*, Stanford University

SVE P1.2 (4040–4044)

Revisiting NMO stretch and velocity analysis

Bo Zhang*, Tang Wang, and Kurt J. Marfurt, University of Oklahoma

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Probing the extended image volume

Tristan van Leeuwen and Felix Herrmann, University of British Columbia, Vancouver

SVE P1.4 (4051–4055)

Leveraging anisotropic workflows in changing times: Two case studies from the eastern Gulf of Mexico

Michael O'Briain*, WesternGeco; Todd Jones, Wai-Ching Ho, and Tom Kastner, Noble Energy; Donal Griffin, Consultant; Olga Zdraveva, Marta Woodward, and Chris Ennen, WesternGeco

SVE P1.5 (4056–4060)

A wide-azimuth TTI model-building and imaging case study from the Central Gulf of Mexico

Mike Cogan*, Olga Zdraveva, and Tanya Kairzhanova, WesternGeco; Mike Schoemann, Statoil

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Geologically consistent velocities obtained by high definition tomography

Patrice Guillaume, Gilles Lambaré, Saverio Sioni, Diego Carotti, Pascale Depré, Gregory Culiarez, Jean-Philippe Montel, Pierre Mitouard, and Sylvère Depagne, CGGVeritas; Sven Frehers and Hans Vosberg, RWE Dea

SVE P1.7 (4066–4070)

Case study: Comparison on shear wave velocity estimation in Dickman field, Ness County, Kansas

Qiong Wu*, and Christopher Liner, University of Houston

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Efficient velocity estimation in the Laplace domain using gain control

Wansoo Ha, Jewoo Yoo*, and Changsoo Shin, Shin's Geophysics

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Reservoir monitoring in oil sands: Developing a permanent cross-well system

Richard Tøndel*, Statoil Research Centre; Jon Ingham, Robert Godfrey, and Jose A. Rivero, Schlumberger Heavy Oil Regional Technology Center, Calgary; Douglas LaBrecque, Multi-Phase Technologies LLC; Hartmut Schütt, Statoil Geophysical Special Methods; David McCormick and Scott Dingwall, Schlumberger-Doll Research; Andrew Williams, Statoil Leismer Asset Team, Calgary

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Simultaneous active/passive seismic monitoring of steam assisted heavy oil production

Eric Forgues*, Estelle Schisselé-Rebel, and Julien Cotton, CGGVeritas

TL 1.3 (4087–4091)

Multicomponent time-lapse monitoring of bitumen recovery and geomechanical implications

Rob Kendall* and Kurt Wikel*, Petrobank Energy and Resources

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Monitoring CO₂ injection into a fluvial brine-filled sandstone formation at the Snøhvit field, Barents Sea

Olav Hansen*, Ola Eiken, Svend Østmo, and Roger Inge Johansen, Statoil; Anna Smith, WesternGeco

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Multicomponent time-lapse monitoring of two hydraulic fracture stimulations in an unconventional reservoir, Pouce Coupe Field, Canada

Jared Atkinson*, Talisman Energy; Thomas Davis, Colorado School of Mines

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Joint inversion of time-lapse seismic and production data for Norne Field

Amit Suman* and Tapan Mukerji, Stanford University; Juan Luis Fernández-Martínez, Stanford University, Oviedo University

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4D monitoring: Example of 4D interpretation in lower flanks systems, Dalia, Angola

Joyce Vemba and Francisco Cunha, Sonangol EP/DEX; Emmanuelle Brechet, Sylvain Toinet, and Sonja Maultsch, TOTAL

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First OBS to OBS time lapse results in the Mars Basin

A. Stopin*, P. J. Hatchell, and C. Corcoran, Shell Global Solutions International B.V.; E. Beal, C. Gutierrez, and G. Soto, Shell Exploration and Production Company

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Velocity and thickness estimation of thin CO₂ layers with uniform and patchy saturations: A 4D synthetic seismic study

Amir Ghaderi*, SINTEF, NTNU; Martin Landrø, NTNU

TL 2.2 (4124–4127)

Monitoring shallow gas migration by refraction timeshift

Hossein Mehdi Zadeh* and Martin Landrø, NTNU

TL 2.3 (4128–4133)

The effect of intrareservoir and nonreservoir shales on 4D seismic signatures

Yesser HajNasser* and Colin MacBeth, Heriot-Watt University

TL 2.4 (4134–4139)

Numerical investigation of time-lapse velocities during hydraulic fracturing

Xueping Zhao*, Applied Seismology Consultants; R. Paul Young, University of Toronto

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Using time strain volume for improved 4D interpretation: Methods and case studies

Dez Chu* and Guy Medema, ExxonMobil Exploration Company, Houston; Jane Burger, ExxonMobil Production Company, Houston

TL 2.6 (4144–4148)

4D inversion constrained by geological and dynamical information

Pierre Thore*, Total EP UK; Christian Hubans and Raymond Bruland, Total EP

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Wave-equation inversion of time-lapse seismic data sets

Gboyega Ayeni* and Biondo Biondi, Stanford University

TL 2.8 (4155–4159)

Visibility analysis using reverse time wave sensitivity for time-lapse target-oriented imaging

Andrew H. Shabelansky*, Alison Malcolm, and Mike Fehler, Massachusetts Institute of Technology

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A quantitative discussion on time-lapse repeatability and its metrics

Juan Cantillo*, Total E&P

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A footprint of rainfall on land seismic data repeatability at the CO₂ storage pilot site, Ketzin, Germany

Artem Kashubin, Uppsala University, now at Schlumberger Cambridge Research; Christopher Juhlin and Alireza Malehmir*, Uppsala University; Stefan Lüth and Alexandra Ivanova, GFZ German Research Centre for Geosciences; Niklas Juhojuntti, Geological Survey of Sweden

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Midpoint match filtering

Jeremy Gallop, Cenovus Energy

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Onshore 4D processing: Niger Delta example: Kolo Creek case study

Aikulola Understanding*, Kanu Magnus, Olotu Samuel, and Osayande Nedomien, Shell Petroleum Development Company; Quadt Edwin, Shell Nigeria Exploration and Production Company

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Optimizing seismic repeatability at Ringhorne, Ringhorne East, Balder and Forseti with QC driven time-lapse processing

Michael B. Helgerud, Upendra Tiwari, and Stephen Woods, ExxonMobil Exploration Company; Peter Homonko, ExxonMobil International Limited; Adam Bucki and Bernard Laugier, ExxonMobil Production Company, North Sea Production; Erik Hicks, Henning Hoerber, and Jamshade Khan, CGGVeritas

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Low cost 4D using NATS and WATS at Europa

Arvind Sharma*, Tom Burch, and Gary Murphy, BP

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Reservoir monitoring with True4D surface seismic data

Adeyemi Arogunmati*, BP America; Jerry M. Harris, Stanford University

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Strategies for elastic full waveform inversion of time-lapse ocean bottom cable (OBC) seismic data

York Zheng* and Penny Barton, University of Cambridge; Satish Singh, Institut de Physique du Globe de Paris

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Monitoring methane hydrate production in the arctic: A preliminary feasibility study

Yang Zhao* and James W. Rector, University of California, Berkeley; Heidi Anderson Kuzma, East Donner Research LLC; Matthew T. Reagan, Lawrence Berkeley Laboratory

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CO₂ saturation, distribution and seismic response in 2D dimensional permeability model

Hamid Behzadi, Vladimir Alvarado*, Amit Padhi, and Subhashis Mallick, University of Wyoming, Laramie

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Time reversal focusing and time-lapse seismic monitoring: Numerical simulation

Yinbin Liu*

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Image integration with learned dictionaries and application to seismic monitoring

Youli Quan, Tiejuan Zhu, and Jerry M. Harris, Stanford University; Roy M. Burnstad, Saudi Aramco; Sergio E. Zarantonello, Algorithmica LLC

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Estimation and analysis of compaction-induced traveltimes shifts: Methodology and parametric study

Steven Smith* and Ilya Tsvankin, Colorado School of Mines

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Numerical studies on stress field monitoring using Coda-Q

Kyosuke Okamoto*, Hitoshi Mikada, Tada-nori Goto, and Junichi Takekawa, Kyoto University

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Cyclic 1D matching of time-lapse seismic data sets: A case study of the Norne Field

Gboyega Ayeni*, Stanford University

TL P1.8 (4239–4243)

Virtual refraction tomography: Application to realistic 3D model

Maria Tatanova* and Kurang Mehta, Shell International E&P Inc.; Boris Kashtan, Saint Petersburg State University

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Time-lapse down-hole seismic surveys for deep EOR target monitoring in South Oman

Denis Kiyashchenko*, Kurang Mehta, and Jorge Lopez, Shell International Exploration and Production; Abdullah Maamari, Rashid Adawi, Said Busaidi, Yahya Maskari, and Guillermo Rocco, Petroleum Development of Oman

VSP 1.2 (4249–4252)

Faster 3D VSP acquisition using simultaneous sources

Jitendra S. Gulati*, Antoun Salama, Scott W. Leaney, Craig J. Beasley, Emmanuel Coste, Henry Menkiti, and John Tulett, Schlumberger

VSP 1.3 (4253–4257)

Field trials of distributed acoustic sensing for geophysical monitoring

J. Mestayer*, B. Cox, P. Wills, D. Kiyashchenko, J. Lopez, and M. Costello, Shell International E&P Inc.; S. Bourne, G. Ugueto, R. Lupton, and G. Solano, Shell Upstream Americas; D. Hill and A. Lewis, QinetiQ OptaSense®

VSP 1.4 (4258–4262)

Understanding the mechanism of interbed multiple generation using VSP data

Vladislav Lesnikov* and John Owusu, Saudi Aramco

VSP 1.5 (4263–4267)

Interferometric microseism localization using neighboring fracture

Oleg V. Poliannikov* and Alison Malcolm, Massachusetts Institute of Technology; Hugues Djikpesse and Michael Prange, Schlumberger-Doll Research

VSP 1.6 (4268–4272)

VSP survey assists in the characterization of deep-water turbiditic reservoir offshore Brazil

João José Marques* and Vitor Novelino, Petrobras UO-RIO; Rafael Guerra, Mario Galaguzza, and Monica Costa, Schlumberger

VSP 1.7 (4273–4277)

Carbon sequestration monitoring with acoustic double-difference waveform inversion: A case study on SACROC walkaway VSP data

Di Yang*, Michael Fehler, and Alison Malcolm, MIT; Lianjie Huang, Los Alamos National Laboratory

VSP 1.8 (4278–4282)

Q-factor estimation through optimization approach to near-offset VSP data

E. Blias, VSFusion

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Linearity of VSP first arrivals as a measure of local azimuthal anisotropy

Ran Zhou*, Robert J. Gibbs, and Dan Quinn, Halliburton; John O'Brien and Ron Harris, Anadarko Petroleum Corporation

VSP 2.2 (4288–4292)

Shear wave analysis of multioffset VSP data from the West Texas Overthrust

A. Sayed*, A. Catoi, R. Rufino, A. Fryer, and M. McClay, Schlumberger; D. Bafia, J. Sheldon, and B. McCormick, SandRidge Energy

VSP 2.3 (4293–4297)

Ambiguities of VTI parameter estimation using VSP slowness data

Chandan Kumar* and Brian Hornby

VSP 2.4 (4298–4303)

Borehole signals obtained using surface seismic sources and ground-force sensors

Flavio Poletto*, Andrea Schleifer, Franco Zgauc, and Lorenzo Petronio, OGS

VSP 2.5 (4304–4308)

Reverse-time migration of time-lapse walkaway VSP data for monitoring CO₂ injection at the SACROC EOR field

Yi Wang*, Lianjie Huang, and Zhifu Zhang, Geophysics Group, Los Alamos National Laboratory

VSP 2.6 (4309–4313)

3D VSP velocity extraction based on wavefield extrapolation

Sam Zandong Sun*, Chunhui Xie, and Xi Xiao, Lab for Integration of Geology and Geophysics (LIGG), China University of Petroleum, Beijing

VSP 2.7 (4314–4318)

The application of polarizing filtering with floating coordinate system in 3D3C VSP wavefield

Jing Du*, Songhui Lin, Hui Wang, and Weiguo Sun, Geophysical Research Institute of Shengli Oilfield, SINOPEC, China

VSP 2.8 (4319–4324)

Drill-bit SWD and seismic interferometry for imaging around geothermal wells

Flavio Poletto*, Piero Corubolo, Biancamaria Farina, Andrea Schleifer, Marco Peronio, and Gualtiero Bohm, OGS; Joseph Pollard, DHI

The Highs and Lows of Broadband Seismic: From Acquisition through Inversion

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Statistical wavelet estimation and bandwidth enhancement

Mirko van der Baan, U of Alberta, Edmonton, Canada

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Viscoelastic orthorhombic full wavefield inversion: development of multiparameter inversion methods

Gillian Royle*, ExxonMobil Upstream Research Company

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Extending the high end of C-wave bandwidth to match P-wavelengths

James Gaiser*, Richard Verm, and Alvaro Chaveste, Geokinetics Inc

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Q compensation and spectral extrapolation: getting high frequencies from low and vice versa

K. A. Innanen, Dept of Geoscience, U Calgary, CREWES

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Broadband land acquisition – survey design issues

Bill Pramik*, Geokinetics, Inc.

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Variable Depth Streamer – The New Broadband Acquisition System

Robert Soubaras and Peter Whiting; CCGVeritas

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Robust source signature deconvolution and the estimation of primaries by sparse inversion

Tim T. Y. Lin and Felix J. Herrmann, Dept. of Earth and Ocean Sciences, U of British Columbia

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A multi-scale strategy for handling broadband seismic data

Virieux J., A. Asnaashari, R. Brossier, G. Hu, A. Roques, ISTERre, U Joseph Fourier - CNRS; S. Operto, C. Castellanos, V. Etienne, Y. Gholami, D. V. Prieux, A. Ribodetti, and D. Pageot, Géoazur - U Nice Sophia-Antipolis - CNRS