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Dikun Yang\*, and Douglas W. Oldenburg, U British Columbia

**EM 1.3** (0593-0598)

*Three-dimensional regularized Gauss-Newton inversion algorithm using a compressed implicit Jacobian calculation for electromagnetic applications*

Maokun Li, Aria Abubakar, Jianguo Liu, Guangdong Pan and Tarek M. Habashy, Schlumberger-Doll Research

**EM 1.4** (0599-0603)

*Hydrocarbon reservoir thickness resolution in 3D CSEM anisotropic inversion*

Jan Petter Morten, Astrid Kornberg Bjørke, and Anh Kiet Nguyen, EMGS

**EM 1.5** (0604-0608)

*3D focusing regularized inversion of marine transient electromagnetic data: A case study from the Alvheim Field, North Sea*

Bruce Hobbs\*, PGS; Michael S. Zhdanov and Alexander V. Gribenko, Technolmaging; Alan Paterson, PGS; Glenn A. Wilson, Technolmaging; Craig Clarke, PGS

**EM 1.6** (0609-0613)

*Stochastic inversion of 2D magnetotelluric data using sharp boundary parameterization*

Jinsong Chen\*, Lawrence Berkeley National Laboratory; Michael G. Hoversten, Chevron Energy Company; Kerry Key, Scripps Institution of Oceanography; Gregg Nordquist, Chevron Geothermal and Power Operations

**EM 1.7** (0614-0618)

*Analysis of the sensitivity to anisotropy of CSEM data using 2.5D modeling and inversion*

Luca Masnaghetti\* and Federico Ceci, WesternGeco

**EM 1.8** (0619-0623)

*Using seismic full waveform inversion to constrain controlled-source electromagnetic inversion*

Vanessa Brown, and Satish Singh, Institut de Physique du Globe de Paris; Kerry Key, U California, San Diego

## Inversion II

**EM 2.1** (0624-0628)

*Three-dimensional inversion of spectral induced polarization data containing EM coupling effects*

Michael Commer\*, Gregory A. Newman, Kenneth H. Williams, and Susan S. Hubbard, Lawrence Berkeley National Laboratory

**EM 2.2** (0629-0633)

*3D inversion of total field mCSEM Data: The Santos Basin case study*

Andrea Zerilli\* and Tiziano Labruzzo, Schlumberger BRGC; Marco Polo Buonora and Paulo de Tarso Luiz Menezes, Petrobras E&P/GEOF/MP; Luiz Felipe Rodrigues, Petrobras E&P/IABS/PN; Andrea Lovatini, WesternGeco EM

**EM 2.3** (0634-0638)

*Applications of multistation TDEM inversions*

L. J. Davis\* and R. W. Groom, Petros Eikon

**EM 2.4** (0639-0643)

*3D inversion of frequency-domain AEM surveys with a moving footprint*

Leif H. Cox\*, Montana Tech and Technolmaging; Glenn A. Wilson, Technolmaging; Michael S. Zhdanov, U Utah and Technolmaging

**EM 2.5** (0644-0649)

*Efficient 3D inversion of MT data using integral equations method and the receiver footprint approach: Application to the large-scale inversion of the EarthScope MT data*

Alexander Gribenko\*, A. Marie Green, Martin Cuma, and Michael S. Zhdanov, U Utah

**EM 2.6** (0650-0654)

*Rapid, approximate 3D inversion of transient electromagnetic (TEM) data*

Ralf Schaa\*, ARC Centre of Excellence in Ore Deposits; Peter K. Fullagar, Fullagar Geophysics

**EM 2.7** (0655-0659)

*Three-dimensional inversion of MT and ZTEM data*

Elliot Holtham\* and Douglas W. Oldenburg, U British Columbia

**EM 2.8** (0660-0664)

*A domain decomposition method for 3D controlled-source electromagnetics*

Nuno Vieira da Silva, Imperial College London; Lucy MacGregor, OHM; Joanna Morgan, Mike Warner, and Adrian Umpleby, Imperial College London

## Marine CSEM Case Studies

**EM 3.1** (0665-0669)

*Marine CSEM of the Scarborough Gas Field*

David Myer\*, Steven Constable, and Kerry Key, Scripps Institution of Oceanography

**EM 3.2** (0670-0674)

*3D CSEM over Frigg: Dealing with cultural noise.*

Antony Price\*, Total CSTJF; Geir Mikklesen, Total Norge; Mark Hamilton, EMGS

**EM 3.3** (0675-0679)

*The performance of CSEM as a derisking tool in oil and gas exploration*

Jonny Hesthammer, Rocksource and U Bergen; Aristofanis Stafatos\*, Rocksource; Stein Fanavoll and Jens Danielsen, EMGS

**EM 3.4** (0680-0684)

*False negatives and positives in the interpretation of EM data*

Stein Fanavoll\* and Jens Danielsen, EMGS; Jonny Hesthammer and Aris Stafatos, Rocksource

**EM 3.5** (0685-0689)

**Signal-to-noise ratio of CSEM data in shallow water**

Anton Ziolkowski\* and David Wright, U Edinburgh

**EM 3.6** (0690-0695)

**Full-azimuth, anisotropic 3D EM inversion applied to a low-resistivity pay reservoir with well control**

D. Crider, and M. Scherrer, Focus Exploration; T. Pham\*, J. J. Zach, and M. A. Frenkel, EMGS Americas

**EM 3.7** (0696-0700)

**A practical example why anisotropy matters: A CSEM case study from Southeast Asia**

Syarina Azura Mohamad\*, Lars Lorenz, Lim Toon Hoong, and Tan Kian Wei, EMGS Asia Pacific; Sandeep K. Chandola, Nurul Saadah, and Fatma Nazihah, PETRONAS Carigali Sdn. Bhd.

**EM 3.8** (0701-0705)

**The controlled-source electromagnetic (CSEM) method in shallow water: A calibration survey**

Mathieu Darnet\* and Peter Van Der Sman, Shell International Exploration and Production; Folkert Hindriks, Shell Olie og Gasudvinding; Alessandro Sandrin, Philip Christian, Line Jensen, and Anette Uldall, Maersk Olie og Gas

## EM for Reservoir Characterization

**EM 4.1** (0706-0710)

**Waterfront monitoring by ground-penetrating radar technology**

Mattia Miorali\*, Delft U Technology; Feng Zhou, China U Geosciences; Evert Slob, Delft U Technology; Rob Arts, Delft U Technology and TNO

**EM 4.2** (0711-0715)

**Rock physics and resistivity depth trends — an integrated approach**

Anders Dræge\*, Statoil

**EM 4.3** (0716-0720)

**3D inversion of time-lapse CSEM data for reservoir surveillance**

Noel Black\*, and Glenn A. Wilson, TechnoImaging; Alexander V. Gribenko and Michael S. Zhdanov, TechnoImaging and U Utah

**EM 4.4** (0721-0725)

**Anisotropy modeling and inversions of DeepLook-EM data from Brazil**

Ping Zhang\*, David Alumbaugh, and Ajay Nalonnil, Schlumberger; Rudolfo Beer, Petrobras

**EM 4.5** (0726-0731)

**Robust inversion of controlled-source electromagnetic data for production monitoring**

Inga Berre, Dept. of Mathematics, U Bergen; Martha Lien\*, Centre for Integrated Petroleum Research, Uni; Trond Mannseth, Centre for Integrated Petroleum Research and Dept. of Mathematics, U Bergen

**EM 4.6** (0732-0736)

**Removal of the airwave effect on MCSEM data by separation of the main part of the anomalous field**

Shuming Wang\* and Michael S. Zhdanov, U Utah

**EM 4.7** (0737-0741)

**Reservoir characterization from joint inversion of marine CSEM and seismic AVA data using genetic algorithms: A case study based on the Luva gas field**

Zhijun Du\* and Lucy M. MacGregor, OHM-Rock Solid Images

**EM 4.8** (0742-0747)

**Three-dimensional fluid-flow constrained crosswell electromagnetic inversion**

Lin Liang\*, Aria Abubakar, and Tarek Habashy, Schlumberger-Doll Research

## Theory and Application

**EM 5.1** (0748-0752)

**A Lorenz-gauged finite-element solution for transient CSEM modeling**

Evan Schankee Um\*, Stanford U; David L. Alumbaugh, Schlumberger-EMI Technology; Jerry M. Harris, Stanford U

**EM 5.2** (0753-0757)

**Hybrid method for 3D modeling of electromagnetic fields in complex structures with inhomogeneous background conductivity**

Masashi Endo\*, TechnoImaging; Xiaojun Liu, U Utah; Michael S. Zhdanov, U Utah and TechnoImaging

**EM 5.3** (0758-0763)

**Comparison of scattering series solutions for acoustic wave and electromagnetic diffusion equations**

Myoung Jae Kwon and Roel Snieder, Colorado School of Mines

**EM 5.4** (0764-0768)

**The use of a circular electrical dipole source in hydrocarbon exploration**

Stefan L. Helwig\*, Vladimir S. Mogilatov, and Boris P. Balashov, EMTEK

**EM 5.5** (0769-0773)

***Exploration of sub-seafloor resistive structures in transition zones using short-offset marine TEM***

Mark Goldman\* and Eldad Levi, The Geophysical Institute of Israel; Buelent Tezkan and Pritam Yogeshwar, U Cologne

**EM 5.6** (0774-0778)

***Denoising multicomponent CSEM data with equivalent-source processing techniques***

Kris MacLennan\* and Yaoguo Li, Colorado School of Mines

**EM 5.7** (0779-0783)

***Jessy DEEP: Jena SQUID systems for deep earth exploration***

Andreas Chwala\*, Ronny Stolz, Rob IJsselsteijn, Frank Bauer, Viatcheslav Zakosarenko, Uwe Hübner and Hans-Georg Meyer, Institute of Photonic Technology; Michael Lorenz, Winfried Rösel and Matthias Meyer, Supracon

**EM 5.8** (0784-0788)

***The effect of pendulum on tethered TEM systems and quantitative modeling***

Adam Smiarowski\*, U Toronto; Aaron Davis and James Macnae, RMIT U

## Methods I

**EM P1.1** (0789-0794)

***A new approach to enhance geoelectrical interface in two-dimensional MT inversion***

Luolei Zhang\*, Peng Yu, Xiao Chen, and Yang Li, Tongji U

**EM P1.2** (0795-0799)

***The hydrocarbon accumulations mapping in crystalline rocks by geoelectric methods***

Nikolay Yakymchuk\* and Sergey Levashov, Management and Marketing Center of Institute of Geological Science NAS Ukraine; Ignat Korchagin, Institute of Geophysics of Ukraine National Academy of Science; Dmitry Razin and Anatoly Juzlenko, Direkciya

**EM P1.3** (0800-0804)

***Testing a new marine MT and CSEM receiver***

Pascal Tarits\* and Jean-Francois D'Eu, IUEM; Sophie Hautot, IMAGIR sarl; Steve Constable, U California, San Diego

**EM P1.4** (0805-0810)

***Increasing the sensitivity of controlled-source electromagnetics by using synthetic aperture***

Y. Fan and R. Snieder, Colorado School of Mines; E. Slob, Colorado School of Mines and Delft U Technology; J. Hunziker, Delft U Technology; J. Singer, J. Sheiman, and M. Rosenquist, Shell International E&P

**EM P1.5** (0811-0815)

***Seismoelectric prospecting: forward model and experimental results***

M. D. Schakel\* and D. M. J. Smeulders, Delft U Technology

**EM P1.6** (0816-0819)

***A numerical investigation of cross-hole seismoelectric conversion***

Ali H. Araji\* and André Revil, Colorado School of Mines; Abderrahim Jardani, U Rouen; Burke J. Minsley, USGS

**EM P1.7** (0820-0823)

***Transient electromagnetic survey optimization using SQUID sensors***

Dennis Woods\*, Discovery International Geophysics

**EM P1.8** (0824-0827)

***An improved approach on distortion decomposition of magnetotelluric impedance tensor***

Yang Li\*, Peng Yu, Luolei Zhang, Jialin Wang, and Jiansheng Wu, Tongji U

## Methods II

**EM P2.1** (0828-0832)

***Successful application of CSAMT for high-rise building site investigation in urban areas of Tangshan, China***

Qingyun Di\*, Diqian Li, Hui Cheng, Changmin Fu, and Miaoyue Wang, Chinese Academy of Sciences

**EM P2.2** (0833-0837)

***Mapping the deep buried long railway tunnel using high-frequency EM, a case history in Taihangshan Tunnel***

Li Zhihua, TSDI, China Ministry of Railways; He Lanfang, BGP

**EM P2.3** (0838-0842)

***Dynamics of internal and external origin revealed by a single-site magnetotelluric monitoring***

Marianna Balasco, Alessandro Giocoli, Vincenzo Lapenna, Gerardo Romano\*, and Luciano Telesca, Institute of Methodologies for Environmental Analysis; Agata Siniscalchi and Simona Tripaldi, U Bari

**EM P2.4** (0843-0847)

***The potential of controlled-source electromagnetic surveying in CO<sub>2</sub> storage monitoring***

Michelle Ellis\*, National Oceanography Centre; Martin Sinha, U Southampton

**EM P2.5** (0848-0852)

***Shallow water 3D CSEM: A case study from Malaysia***

Håkon Toralv Pedersen\*, EMGS; M. Akmal Afendi, B. Adnan, and Azani B. A. Manaf, Petronas

**EM P2.6** (0853-0858)

***Controlled-source electromagnetic interferometry: The illumination function***

Jurg Hunziker\*, Joost van der Neut, Evert Slob, and Kees Wapenaar, Delft U Technology; Yuanzhong Fan and Roel Snieder, Colorado School of Mines

## Methods III

### EM P3.1 (0859-0863)

*Three-dimensional inversion of transient magnetotelluric data at Pasfield Lake, Saskatchewan*

David Goldak\*, EMPulse Geophysics; Ken Witherly, Condor Consulting; Peter Kosteniuk, Kosteniuk Consulting

### EM P3.2 (0864-0868)

*Sensitivity of the high-frequency sounding method to variations in electrical properties*

Erin L. Wallin, USGS

### EM P3.3 (0869-0873)

*Three-dimensional finite modeling for a frequency-domain electric dipole source*

Zhang Jifeng and Li Xiu, Chang'an U; Tang Jingtian, Central South U

### EM P3.4 (0874-0878)

*Effects of a limited reservoir and induced polarization on acquisition with vertical electrodes*

Terje Holten, Petromarker; Bension Singer, Petromarker and 3DEM Services; Eirik Grude Flekkøy\*, Petromarker and U Oslo

## Modeling and Inversion

### EM P4.1 (0879-0883)

*Quantifying the effect of the water layer in shallow marine active source EM*

David Wright\* and Anton Ziolkowski, U Edinburgh

### EM P4.2 (0884-0888)

*1D sensitivity of land-based CSEM to thin resistive layers*

Michael Becken\* and Rita Streich, GFZ German Research Centre for Geosciences

### EM P4.3 (0889-0894)

*Time-lapse CSEM analysis of a shaly sandstone simulated by comprehensive petro-electric modeling*

Alireza Shahin\*, U Texas at Austin; Kerry Key, Scripps Institution of Oceanography; Paul L. Stoffa and Robert H. Tatham, U Texas at Austin

### EM P4.4 (0895-0899)

*Constrained inversion of magnetotelluric data using parallel simulated annealing algorithm and its application*

Hu Zuzhi, He Zhanxiang, Wang Yongtao, and Sun Weibiin, BGP

### EM P4.5 (0900-0904)

*Inversion of anisotropic MT data using approximate equality constraints*

Cicero Regis\*, Edelson da Cruz Luz, and Marcus Danilo Costa, U Federal do Para

### EM P4.6 (0905-0909)

*4D visualization of the airwave in a homogeneous halfspace*

Jurg Hunziker\* and Evert Slob, Delft U Technology

### EM P4.7 (0910-0914)

*Regularized synchronous joint inversion of magnetotelluric and seismic data*

Xiao Chen\*, Peng Yu, Luolei Zhang, and Yang Li, Tongji U

### EM P4.8 (0915-0919)

*Study of long-bipole and large-scale CSEM with layer-matrix method*

Changmin Fu\*, Qingyun Di, and Miaoyue Wang, Chinese Academy of Sciences

## Data Consideration and Applications

### FWI 1.1 (0920-0924)

*Application of 2D acoustic frequency-domain full-waveform inversion to OBC wide-aperture data from the Valhall Field*

V. Prioux, Geoazur, CNRS, U Nice Sophia, Antipolis; R. Brossier, LGIT, U Joseph Fourier; J. H. Kommendal, and O. I. Barkved, BP Norway; S. Operto, Geoazur, CNRS, U Nice Sophia, Antipolis; J. Virieux, LGIT, U Joseph Fourier

### FWI 1.2 (0925-0929)

*Business impact of full waveform inversion at Valhall*

Olav Barkved, BP Norge; Uwe Albertin, BP Americas; Pete Heavey, Jan H. Kommedal, Jean-Paul van Gestel, Ruth Synnøve, Haga Pettersen, and Chris Kent, BP Norge

### FWI 1.3 (0930-0934)

*Application of acoustic full waveform inversion to a low-frequency large-offset land data set*

René-Edouard Plessix\*, Guido Baeten, Jan Willem de Maag, and Marinus Klaassen, Shell International E&P; Zhang Rujie and Tao Zhifei, BGP

### FWI 1.4 (0935-0939)

*Multidimensional nonlinear full waveform inversion of gas cloud reflection data using a genetic algorithm and a blended acquisition approach*

A. R. Ghazali\*, Petronas; D. J. Verschuur and A. Gisolfi, Delft U Technology

**FWI 1.5** (0940-0944) **FWI 2.5** (0983-0987)  
*A comparison of inversion results for two full-waveform methods that utilize the lowest frequencies in dual-sensor recordings*  
Steve Kelly\*, Jaime Ramos-Martínez, Boris Tsimelzon, and Sean Crawley, PGS

**FWI 1.6** (0945-0950) **FWI 2.6** (0988-0992)  
*Acoustic waveform tomography of OBS data in the Nankai subduction zone*  
Rie Kamei\* and R. Gerhard Pratt, U Western Ontario

**FWI 1.7** (0951-0956) **FWI 2.7** (0993-0997)  
*3D acoustic waveform inversion in the Laplace domain using an iterative solver*  
Sukjoon Pyun\*, Inha U; Woohyun Son and Changsoo Shin, Seoul National U

**FWI 1.8** (0957-0961) **FWI 2.8** (0998-1002)  
*3D full waveform inversion on a Gulf of Mexico data set*  
Denes Vigh\*, Bill Starr, Jerry Kapoor, and Hongyan Li, WesternGeco

## Anisotropy and Elasticity

**FWI 2.1** (0962-0966)  
*VTI full waveform inversion: A parameterization study with a narrow-azimuth streamer data example*  
Rene-Edouard Plessix\* and Harry Rynja, Shell International

**FWI 2.2** (0967-0971)  
*2D waveform inversion in the Laplace domain for acoustic-elastic coupled media*  
Ho Seuk Bae\*, Changsoo Shin, and Dong-Joo Min, Seoul National U; Henri Calandra, TOTAL

**FWI 2.3** (0972-0976)  
*Anisotropic anelastic full waveform inversion: Application to North Sea offset VSP data*  
Christophe Barnes\*, U de Cergy-Pontoise; Marwan Charara, Institut de Physique du Globe de Paris

**FWI 2.4** (0977-0982)  
*Randomized full-waveform inversion: A dimensionality-reduction approach*  
Peyman P. Moghaddam and Felix J. Herrmann, U British Columbia

*A time-domain waveform inversion using filtering techniques*  
Minkyung Son\*, Youngseo Kim, and Changsoo Shin, Seoul National U

*Building starting model for full waveform inversion from wide-aperture data by stereotomography*  
Vincent Prieux, Geosciences Azur, CNRS, UNSA; G. Lambare, CGG Veritas; S. Operto, Géosciences Azur, CNRS, UNSA; Jean Virieux, LGIT, UJF

*A strategy for selecting the Laplace damping constants in the Laplace-domain inversion, based on the relationship between the Laplace damping constant and the detectable depth of a high-velocity structure*  
Sunyoung Park\*, Wansoo Ha, and Changsoo Shin, Seoul National U; Sukjoon Pyun, Inha U; Henry Calandra, TOTAL

*Imaging of VTI media by elastic frequency-domain full-waveform inversion of global offset data*  
Y. Gholami, Géoazur, CNRS, U Nice Sophia, Antipolis; R. Brossier, LGIT, U Joseph Fourier; A. Ribodetti, and Stephane Operto, U Nice Sophia, Antipolis; Jean Virieux, LGIT, U Joseph Fourier

## Computational Advances and Multisource

**FWI 3.1** (1003-1007)  
*Full waveform inversion with image-guided gradient*  
Yong Ma\* and Dave Hale, Colorado School of Mines; Zhaobo (Joe) Meng and Bin Gong, ConocoPhillips

**FWI 3.2** (1008-1012)  
*A preconditioning scheme for full waveform inversion*  
Antoine Guitton\*, Geolmaging Solutions; Gboyega Ayeni, Stanford U; Gladys Gonzalez, Repsol

**FWI 3.3** (1013-1017)  
*Full waveform inversion using deterministic source encoding*  
Fuchun Gao\*, Andreas Atle, and Paul Williamson, Total

**FWI 3.4** (1018-1022)  
*Source synthesis for waveform inversion*  
William Symes\*, Rice U



**FWI 3.5** (1023-1028)

*Full waveform seismic inversion using the source-receiver compression approach*

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

**FWI 3.6** (1029-1033)

*Full-waveform inversion from compressively recovered model updates*

Xiang LI\* and Felix J. Herrmann\*, EOS-UBC

**FWI 3.7** (1034-1038)

*Preconditioning full waveform inversion with phase-encoded Hessian*

Yaxun Tang\*, Stanford U; Sunwoong Lee, ExxonMobil Upstream Research Company

**FWI 3.8** (1039-1043)

*A 3D massively parallel structured approximate direct Helmholtz solver: Algorithms and methods*

Shen Wang\*, Jianlin Xia, and Maarten V. de Hoop, Purdue U

## Multisource and Algorithms

**FWI P1.1** (1044-1049)

*3D multisource full-waveform inversion using dynamic quasi-Monte Carlo phase encoding*

Chaiwoot Boonyasirawat\* and Gerard T. Schuster, King Abdullah U Science and Technology

**FWI P1.2** (1050-1054)

*Computational issues and strategies related to full waveform inversion in 3D elastic media: Methodological developments*

Vincent Etienne, Geoazur — U Nice Sophia-Antipolis; Jean Virieux, U Joseph Fourier; Stephane Operto, U Nice Sophia-Antipolis; Yuelian Jia, U Joseph Fourier

**FWI P1.3** (1055-1058)

*Fast full waveform inversion of multishot seismic data*

Baoli Wang\*, and Jinghui Gao, Xi'an Jiaotong U

**FWI P1.4** (1059-1064)

*2D elastic waveform inversion in the Laplace domain*

Wookeun Chung\*, and Changsoo Shin, Seoul National U; Sukjoon Pyun, Inha U; Henri Calandra, TOTAL

**FWI P1.5** (1065-1069)

*Subsurface parameter estimation in full wavefield inversion and reverse time migration*

Sunwoong Lee\*, Jerry R. Krebs, John E. Anderson, Anatoly Baumstein, and Dave Hinkley, ExxonMobil Upstream Research Company

**FWI P1.6** (1070-1074)

*A Helmholtz iterative solver with semianalytical preconditioner for the frequency-domain full-waveform inversion*

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

**FWI P1.7** (1075-1079)

*Enhancing resolution of seismic data based on waveform inversion with cooperative coevolutionary differential evolution algorithm*

Chao Wang\*, and Jinghui Gao, Xi'an Jiaotong U; Bin Weng, Research Center of CNOOC

**FWI P1.8** (1080-1084)

*Acoustic full-waveform inversion using least-squares method with active constraint balancing technique*

Yonghwan Joo\*, Soon Jee Seol, and Joongmoo Byun, Hanyang U

## Innovative Geophysics Methods to Mitigate Risk in Exploration and Exploitation

**GEO 1.1** (1085-1090)

*EGS: 'Hydrofracturing' ? 'Hydrofaulting' ?*

Peter Leary\*, Peter Malin, and Eylon Shalev, U Auckland

**GEO 1.2** (1091-1094)

*Interpretation of the subsurface at the geothermal Kamojang Field, West Java, using AMT*

Gigih Helma Wijaya\*, Angga, Wisnu, Annas, Roby, Diego, and Neni, Gadjah Mada U

**GEO 1.3** (1095-1099)

*The Gillingarra temperature anomaly, northern Perth Basin, Australia*

M. F. Middleton, Western Australian Department of Mines and Petroleum

**GEO 1.4** (1100-1106)

*Stochastic temperature, heat flow, and geothermal gradient modeling direct from a 3D map of the Cooper Basin region, Central Australia*

Tony Meixner\*, Geoscience Australia; Helen Gibson, Ray Seikel, and Des FitzGerald, Intrepid Geophysics; Kurt Stüewe, U Graz; Richard Lane, Geoscience Australia



**GEO 1.5** (1107-1111)

***Role of 1D MT inversion in a 3D geothermal field***

Dhananjay Kumar\*, and G. Michael Hoversten, Chevron Energy Technology Company; Gregg Nordquist, Chevron Geothermal and Power Operations; William Cumming, Cumming Geoscience

**GEO 1.6** (1112-1116)

***New precompetitive data for uranium and geothermal energy exploration in Australia***

Ned Stolz, Geoscience Australia

**GEO 1.7** (1117-1121)

***SYSMIN airborne geophysical surveys in Mali***

Ousmane Konate\*, Ministry of Mines, Mali; Alan Reid, Reid Geophysics and U Leeds

**GEO 1.8** (1122-1126)

***An assessment of EM and potential field data at Pasfield Lake, Saskatchewan: A suspect astrobleme***

Ken Witherly, Condor Consulting; David Goldak, EMPulse Geophysics; Peter Kosteniuk, Kosteniuk Consulting

## Gravity and Gradiometry

**GM 1.1** (1127-1131)

***Gravity gradient interpretation of salt bodies in nil-zone regimes***

David Hatch\* and Maria Anecchione, Gedex

**GM 1.2** (1132-1136)

***Rapid imaging of gravity gradiometry data using 2D potential field migration***

Michael S. Zhdanov\*, U Utah and Technolmaging; Xiaojun Liu, U Utah; Glenn A. Wilson, Technolmaging

**GM 1.3** (1137-1141)

***Single-borehole imaging using gravity gradiometer data***

Hyoungrea Rim\*, Colorado School of Mines and Korea Institute of Geoscience and Mineral Resources; Yaoguo Li, Korea Institute of Geoscience and Mineral Resources

**GM 1.4** (1142-1145)

***Improved tidal corrections for time-lapse microgravity surveys***

Jeffrey D. MacQueen\*, MicrogLaCoste

**GM 1.5** (1146-1151)

***Interpretation of gravity gradient tensor data using eigenvector analysis: An example from the Vredefort impact structure, South Africa***

Majid Beiki\* and Laust B. Pedersen, Uppsala U

**GM 1.6** (1152-1156)

***New datums by the end of the next decade for the United States of America***

Daniel R. Roman\*, Dru A. Smith, and Vicki A. Childers, NOAA's National Geodetic Survey

**GM 1.7** (1157-1161)

***Multiscale estimation of excess mass from gravity data***

R. Castaldo\*, M. Fedi, and G. Florio, U di Napoli 'Federico II'; F. Italiano, eni E&P Division

**GM 1.8** (1162-1166)

***Progress on interpreting dykes from full tensor magnetic gradiometry***

Des FitzGerald\*, Dominik Argast, and Rod Paterson, Intrepid Geophysics; Horst Holstein, U Aberystwyth

## Magnetic Interpretation and Processing

**GM 2.1** (1167-1171)

***Designing and building an unmanned aircraft system for aeromagnetic surveying***

Claire Samson\*, Paul Straznicky, Jeremy Laliberté, and Raymond Caron, Carleton U; Stephen Ferguson and Reed Archer, Sander Geophysics

**GM 2.2** (1172-1177)

***Efficient 3D inversion of magnetic data via octree mesh discretization, space-filling curves, and wavelets***

Kristofer Davis\* and Yaoguo Li, Colorado School of Mines

**GM 2.3** (1178-1181)

***Application of magnetic amplitude inversion in exploration for natural gas in volcanics***

Yaoguo Li, Colorado School of Mines

**GM 2.4** (1182-1187)

***Total variation regularization for depth-to-basement estimate***

Cristiano M. Martins, Observatorio Nacional; Williams A. Lima, U Fed do Pará; Valéria C. F. Barbosa\*, Observatorio Nacional; João B. C. Silva, U Fed do Pará

**GM 2.5** (1188-1192)

*A numerically stable magnetic anomaly formula for uniform polyhedra*

Horst Holstein\*, Aberystwyth U and Intrepid Geophysics; Costas Anastasiades, Aberystwyth U

**GM 2.6** (1193-1197)

*Government airborne geophysical data stimulating mineral exploration in Namibia*

David Hutchins\* and Martin Negonga, Geological Survey of Namibia

**GM 2.7** (1198-1201)

*Forgotten truths, myths, and sacred cows of potential fields geophysics*

Alan Reid\*, Reid Geophysics

**GM 2.8** (1202-1206)

*Estimating structural dip from gravity and magnetic profile data*

Jeffrey D. Phillips\*, USGS

## Interpretation and Processing

**GM P1.1** (1207-1211)

*Studies on marine gravity profiles along the equator of the Central Indian Ocean Basin*

S. Rajendran\*, Cochin U

**GM P1.2** (1212-1216)

*Statistical correction method with threshold for magnetic data with interference*

Liu Yunxiang\*, Zhao Wenju, Liu Guanping, and Zheng Shengxian, BGP

**GM P1.3** (1217-1221)

*Estimating pre-Khuff thickness and delineating basement configuration in Dibdibba Trough, Kuwait: An integrated model-based study*

Singh Parmjit\*, Riyasat Husain, Abdul Aziz Sajer, and Al-Fares Abdulaziz Mohd., Kuwait Oil Company

**GM P1.4** (1222-1225)

*Multiscale analysis of geomagnetic data using the continuous wavelet transform: A case study from Hoggar (Algeria)*

Sid-Ali Ouadfeul\*, USTHB U; Leila Aliouane and Said Eladj, U Boumerdes

**GM P1.5** (1226-1230)

*Joint interpretation of maps using gradient directions, cross- and dot-product values to determine correlations between bathymetric and gravity anomaly maps*

Pavel Jilinski\* and Sergio Fontes, Observatorio Nacional; Luis A. Gallardo, U Western Australia

**GM P1.6** (1231-1235)

*Integrated geophysical study of Mesozoic distribution in northeastern continental margin of the South China Sea*

Fan Jiang, Fujian Geologic Surveying and Mapping Institute; Jiansheng Wu, Tongji U

## Crossing the Geophysical Spectrum

**GT P1.1** (1236-1240)

*Issues regarding the use of time-lapse seismic surveys to monitor CO<sub>2</sub> sequestration*

Grace Cairns, Helmut Jakubowicz, Lidia Lonergan, and Ann Muggeridge, Imperial College London

**GT P1.2** (1241-1245)

*The seismic wavefield in random cracked media*

Wang Enli\*, CNPC

**GT P1.3** (1246-1250)

*A numerical study of the simulation of fluid flow into a permeable formation and its effect on acoustic full waveform*

Ilgar Azizov, U Houston

**GT P1.4** (1251-1255)

*Multiscattering illumination in blended acquisition design*

Guus Berkhou, Gerrit Blacquièrè, and Eric Verschuur, Delft U Technology

## Advances in Interpretation Techniques I

**INT 1.1** (1256-1260)

*Seismic description of karst topography and caves of Ordovician carbonate reservoirs, Lungu*

Haijun Yang, PetroChina; Fangjian "Jack" Xue\*, Schlumberger; Wenqing Pan and Lixin Chen, PetroChina; Pin Yang, Yanming Tong, and Chunduan Zhao, Schlumberger

**INT 1.2** (1261-1265)

*Turning the world of prestack interpretation sideways*

Larry Fink, Landmark Graphics

**INT 1.3** (1266-1270)

*Image-guided 3D interpolation of borehole data*

Dave Hale, Colorado School of Mines

**INT 1.4** (1271-1275)

*Painting seismic images in 3D*

Chris Engelsma and Dave Hale, Colorado School of Mines

**INT 1.5** (1276-1280)

*Speeding up seismic image segmentation*

Adam D. Halpert\*, Robert G. Clapp, and Biondo Biondi, Stanford U

**INT 1.6** (1281-1286)

*Integration of coherence and volumetric curvature images*

Satinder Chopra, Arcis; Kurt J. Marfurt, U Oklahoma

**INT 1.7** (1287-1291)

*Volumetric dips and azimuth of prestack seismic data using the gradient structure tensor*

Pascal Klein\* and Loic Richard, Paradigm

**INT 1.8** (1292-1296)

*Thin-bed detection and correlation with instantaneous frequency*

Hongliu Zeng\*, Bureau of Economic Geology

## Case Histories I

### **INT 2.1** (1297-1301)

*Data conditioning and seismic attribute analysis in the Eagle Ford Shale play: Examples from Sinor Ranch, Live Oak County, Texas*

Alison T. Henning\*, Ryan Martin, and Gaynor Paton, Foster Findlay Associates; Richard Kelvin, Seitel

### **INT 2.2** (1302-1306)

*Illuminating the efficiency of seismic geomorphology in understanding tectonic and basinal evolution: A case study*

Souvik Sengupta\*, Indian School of Mines

### **INT 2.3** (1307-1311)

*Seismic attributes adding a new dimension to prospect evaluation and geomorphology identification in the Malay and adjacent basins*

Deva P. Ghosh\* and Nor Azhar Ibrahim, PETRONAS Research Sdn Bhd; Bernato Viratno and Hamdan Mohamad, PETRONAS Carigali Sdn Bhd

### **INT 2.4** (1312-1316)

*Seismic-constrained reservoir property prediction: Example from a Middle East carbonate field offshore Abu Dhabi, UAE*

Jie Zhang\*, Raed El-Awawdeh, Zyg J. Shevchek, Naeema Khouri, and Akmal Sultan, Zakum Development; Christopher E. Harris and Joe M. Reilly, ExxonMobil Upstream Research Company

### **INT 2.5** (1317-1321)

*Case history: Spicing up midcontinent seismic interpretation*

Christopher L. Liner\*, Bryan Flynn, and Jianjun Zeng, U Houston

### **INT 2.6** (1322-1326)

*High-resolution enhancement and interpretation for thin Yegua sands in Texas*

Jarrett Pierce\* and Gary Yu, Geotrace Technologies

### **INT 2.7** (1327-1331)

*3D seismic interpretation and reserve estimation of Ossu Field in OML 124, onshore Niger Delta Basin, Nigeria*

Uzonna Anyiam\*, Victor Nduka, and Alex Opara, Federal U Technology Owerri

### **INT 2.8** (1332-1336)

*4D added value in reservoir model construction — Dalia Field case study*

Philippe Prat\*, Stewart Clark, Herbert Lescanne, Thierry Manivit, Patrick Turpin, and Michel Vert Total E&P; Sylvain Toinet, Total E&P Angola

## Case Histories II

### **INT 3.1** (1337-1341)

*Mapping imbricate structures in the thrust belt of southeast Turkey by a large-offset seismic survey*

Oz Yilmaz\*, Anatolian Geophysical; Serdar Uygun, Ali Ölmez, and Emel Çali, Turkish Petroleum

### **INT 3.2** (1342-1346)

*Application of discrete frequency coherence cubes in fracture detection in volcanic rocks with full-azimuth seismic data*

Sun Desheng\*, Ling Yun, Guo Xiangyu, Gao Jun, and Lin Jixiang, BGP

### **INT 3.3** (1347-1351)

*Seismic lineament analysis of a fractured limestone reservoir in Ujung Pangkah Field*

Donald Easley and Ferry Yustiana\*, Hess Indonesia; Azalea Hidayat, Schlumberger

### **INT 3.4** (1352-1356)

*Delineation of subseismic faults: A new approach; Kuwait example*

Anand Prakash\*, Riyasat Husain, and Abdulaziz H. Ali Sajer, Kuwait Oil Company

### **INT 3.5** (1357-1361)

*Estimating fault displacements in seismic images*

Luming Liang\* and Dave Hale, Colorado School of Mines; Marko Maucec, Halliburton

### **INT 3.6** (1362-1366)

*Understanding structural complexity using attributes derived from simple equations: Columbus Basin, Teak Field*

Marcos Victoria\*, Aaron Rampersad, and Jose Grimaldi, REPSOL

### **INT 3.7** (1367-1371)

*Subseismic faults detection and characterization using seismic continuity analysis in Mauddud Formation, Burgan Field*

\*Kishore Jyoti, Roy Burman, and Kalyanbrata Datta, Kuwait Oil Company; Nicolas Desgoutte and Laurent Cuilhé, Beicip-Franlab

### **INT 3.8** (1372-1376)

*Seismic attribute illumination of Woodford Shale faults and fractures, Arkoma Basin, Oklahoma*

Yanxia Guo, Kui Zhang, and Kurt J. Marfurt, U Oklahoma

## Advances

### INT 4.1 (1377-1381)

#### *Facies probabilities from multidimensional crossplots of seismic attributes*

Reinaldo J. Michelena\*, Kevin S. Godbey, and Patricia E. Rodrigues, iReservoir.com

### INT 4.2 (1382-1386)

#### *Applications of automatic seismic image flattening and edge detection to land seismic data*

Qiang Fu\*, and Yi Luo, Saudi Aramco; Ji Xu, Cornell U

### INT 4.3 (1387-1391)

#### *Globally consistent dip estimation*

Victor Aarre\*, Schlumberger Information Solutions

### INT 4.4 (1392-1397)

#### *Seismic signature comparisons of deepwater producing provinces*

Roberto Fainstein\*, WesternGeco

### INT 4.5 (1398-1402)

#### *Spectral waveform classifier: Method and examples*

Xin-Gong Li\*, Phillip L. Jong, Zoltan Sylvester, and Harry Germs, Shell International E&P; Chi-Chin Feng, Shell E&P; Fa Dwan, and Alan Jackson, Shell International E&P; Donald P. Griffith, Shell E&P; Jack Cook and Stephane Gesbert, Shell International E&P

### INT 4.6 (1403-1407)

#### *Self-organizing artificial neural nets for automatic anomaly identification*

Tom Smith\*, Geophysical Insights; Sven Treitel, TriDekon

### INT 4.7 (1408-1412)

#### *Complex spectral decomposition via inversion strategies*

David C. Bonar\* and Mauricio D. Sacchi, U Alberta

### INT 4.8 (1413-1417)

#### *An efficient method of effective porosity prediction using an unconventional attribute through multi-attribute regression and probabilistic neural network: A case study in a deepwater gas field, East Coast of India*

Amit K. Ray\* and Samir Biswal, Reliance Industries

## Advances I

### INT P1.1 (1418-1422)

#### *Channel system characterization using Wigner-Ville distribution-based spectral decomposition*

Yandong Li\*, Jinsong Li, and Xiaodong Zheng, PetroChina

### INT P1.2 (1423-1427)

#### *Local complex-valued correlation of seismic phases*

Thomas J. Browaeys\*, TOTAL

### INT P1.3 (1428-1432)

#### *Integrated interpretation techniques for detection of fracture corridors: An essential play element of hydrocarbon potential for a tight carbonate reservoir in Southeast Kuwait*

Raju T. Arasu\*, Mohammad Dawwas Al-Ajmi, Sunil K. Singh, Arun K. Dey, and Talal F. Al-Adwani, Kuwait Oil Company; Kasym Devlikanov, Schlumberger

### INT P1.4 (1433-1437)

#### *Fracture characterization through the use of azimuthally sectorized attribute volumes*

Amanda Thompson\* and Jamie Rich, Devon; Mike Ammerman, Ammerman Geophysical

### INT P1.5 (1438-1442)

#### *Interpretation of high-resolution seismic data in a flow basalt area in the NE Atlantic Ocean*

H. Simonsen\* and R. J. Brown, The Puffins Project, U Faroe Islands

### INT P1.6 (1443-1447)

#### *Diffraction amplitude analysis for detecting diffractor width*

S. Hesam Kazemeini\*, U Texas at Austin

### INT P1.7 (1448-1451)

#### *Mississippi Canyon high-resolution reprocessing: Applications for shallow drilling hazards and geologic evaluation*

Francis Rollins\*, Richard Weiland, and Kristy Hanley, BP America; Abu Chowdhury and Mike Hebert, TGS

### INT P1.8 (1452-1456)

#### *Seismic interpretation of gas hydrate based on physical properties of sediments*

Zijian Zhang\*, AOA Geophysics and U Houston; De-hua Han, U Houston

## Advances II

### INT P2.1 (1457-1461)

#### *Joint frequency expanding method of crosswell seismic data and 3D seismic data*

Jian-guo Song\* and Zhen-chun Li, China U Petroleum; Yan-guang Wang and Qing-feng Kong, ShengLi GRI, Sinopec

### INT P2.2 (1462-1466)

#### *Seismic attributes on frequency-enhanced seismic data*

Satinder Chopra, Arcis; Kurt J. Marfurt, U Oklahoma; Somanath Misra, Arcis

### INT P2.3 (1467-1472)

#### *Beyond curvature — volumetric estimates of reflector rotation and convergence*

Kurt J. Marfurt\*, U Oklahoma; Jamie Rich, Devon Energy

### INT P2.4 (1473-1477)

#### *Neural network analysis and poststack inversion: A comparison*

Somanath Misra\*, Satinder Chopra, and John Zhang, Arcis

### INT P2.5 (1478-1482)

#### *Spectral decomposition along the travel path of signal wavelets*

Hao Guo, Hess; Kurt J. Marfurt, U Oklahoma

### INT P2.6 (1483-1487)

#### *A fast third-generation coherence algorithm realizing method*

Xiaokai Wang\*, Jinghui Gao, and Wenchao Chen, Xi'an Jiaotong U; Yongzhong Song, Exploration and Development Research Institute of Daqing Oilfield Company

### INT P2.7 (1488-1493)

#### *Edge preserving vector filter for smoothing reflector dip and azimuth*

Wei Wang\*, Jinghui Gao, Hui Zheng, and Wenchao Chen, Xi'an Jiaotong U; Erhua Zhang, Daqing Oilfield Company

### INT P2.8 (1494-1499)

#### *Continuous wavelet transform phase residues applied to detect stratigraphic discontinuities*

Marcilio Castro de Matos\*, Instituto Militar de Engenharia; Oswaldo Davogusto, Kui Zhang, and Kurt J. Marfurt, U Oklahoma

## Case Histories

### INT P3.1 (1500-1505)

#### *Seismic inversion for splay fault interpretation in the Nankai Trough accretionary wedge, Japan*

Yi Tao\*, Mrinal K. Sen, Nathan Bangs, and Thomas Hess, U Texas at Austin

### INT P3.2 (1506-1510)

#### *Toward a sophisticated 3D model of the Netherlands: Methods, uncertainties, and first results*

Ed Duin\*, Serge van Gessel, Hans Doornenbal, and Johan ten Veen, TNO Built Environment and Geosciences – Geological Survey of the Netherlands

### INT P3.3 (1511-1515)

#### *Structural-stratigraphic model using seismic attributes in San Cristobal area, Orinoco Oil Belt, Venezuela*

Isaías Castillo\*, Carlos Márquez, and Pedro León, PDVSA CVP Orinoco Magna Reserves Project

### INT P3.4 (1516-1520)

#### *Fracture analysis using 3D seismic attributes in the Hunton Limestone, Oklahoma, USA*

Evan Staples\*, Kurt J. Marfurt, and Zeev Reches, U Oklahoma

### INT P3.5 (1521-1525)

#### *3D seismic attributes analysis to outline channel facies and reveal heterogeneous reservoir stratigraphy: Weirman Field, Ness County, Kansas, USA*

Abdelmoneam Raef, Matthew Totten, Charlotte Perdew\*, and Mazin Abbas, Kansas State U

### INT P3.6 (1526-1530)

#### *An ultra-deep Paleokarst system in the Ordovician, North-Central Tarim Basin, China: High-resolution 3D seismic interpretation*

Hongliu Zeng\*, Bob Loucks, and Xavier Janson, Bureau of Economic Geology; Quizhong Wang, Yiping Xia, and Ligui Xu, BGP

### INT P3.7 (1531-1534)

#### *An ultra-deep Paleokarst system in the Ordovician, North-Central Tarim Basin, China: Outcrop analog and synthetic seismic models*

Xavier Janson, Hongliu Zeng\*, and Bob Loucks, Bureau of Economic Geology; Quizhong Wang, Chunyang Wang, Shunxin Li, Tao Yang, Yiping Xia, and Ligui Xu, BGP

## Advances in Interpretation Techniques

### INT P4.1 (1535-1539)

*Seismic features and the human eye: RGB blending of azimuthal curvatures for enhancement of fault and fracture interpretation*  
Trond Hellem Boe\* and Ralph Daber, Schlumberger Norway Technology Center

### INT P4.2 (1540-1544)

*Efficient quality control on complex horizon-fault network interpretation through geological modeling and 3D volumic restoration*  
Jean-François Lecomte, Jean-Paul Callot, Jean-Luc Rudkiewicz, and Martin Guiton, IFP; Laurent Deny, Stanislas Jayr, and Jean-Claude Dulac, Paradigm

### INT P4.3 (1545-1549)

*Identification of subtle seismic sequence boundaries by all-reflector tracking method*  
Guangfa Zhong\*, Tongji U; Yalin Li, Furong Wu, and Yan Xiong, CNPC

### INT P4.4 (1550-1554)

*Orientation steering fault-preserving filtering*  
Yongshi Wang\* and Peijie Yang, Geological Scientific Research Institute of Shengli Oilfield

### INT P4.5 (1555-1559)

*Local similarity with the envelope as a seismic phase detector*  
Sergey Fomel, U Texas at Austin; Mirko van der Baan, U Alberta

### INT P4.6 (1560-1565)

*Maximum autocorrelation factors applied to electrofacies classification*  
Rodrigo Duarte Drummond\*, Alexandre Campana Vidal, Juliana Finoto Bueno, and Emilson Pereira Leite, U Campinas

### INT P4.7 (1566-1570)

*Frequency-dependent seismic attributes and their application for hydrocarbon detection*  
Jiang Li, Yang Shao-guo, Zhao Ming-jin, and Yang San-nv, LandOcean Energy Services

### INT P4.8 (1571-1575)

*Spectral decomposition and derived techniques for clastic reservoir identification and its application*  
Chen Maoshan\*, Wan Zhonghong, Zhang Hongying, and Zhao Haizhen, BGP

## Attributes and Inversion

### INT P5.1 (1576-1580)

*Prestack inversion combined with geostatistical simulation to predict thin reservoirs*  
Wang Xia\*, Zhang Yanqing, Li Jianlin, Wang Guanmei, Liu Leisong, Li Xiaoxi, Chen Chunji, Yang Yu, and Wang Xiaoyun, BGP, CNPC

### INT P5.2 (1581-1585)

*Spectral decomposition using a deconvolutive short-time Fourier transform spectrogram*  
Zhang Qiang\* and Lu Wen-kai, Tsinghua U

### INT P5.3 (1586-1590)

*Seismic attributes selection based on SVM for hydrocarbon reservoir prediction*  
Zhang Chang-kai\* and Lu Wen-kai, Tsinghua U

### INT P5.4 (1591-1595)

*Applying self organizing maps of multiple attributes, an example from the Red Fork Formation, Anadarko Basin*  
Atish Roy\*, U Oklahoma; Marcilio Castro de Matos, Instituto Militar de Engenharia; Kurt Marfurt, U Oklahoma

### INT P5.5 (1596-1600)

*Issues in thin bed seismic attribute analysis and practical solutions*  
Shuhui Liu\* and Changjiang Wang, Shengli Oilfield Company

### INT P5.6 (1601-1605)

*Seismic attribute analysis based on information entropy for carbonate reservoir characterization*  
Yang Hao\* and Zheng Xiaodong, PetroChina; Ma Shufang, China National Offshore Oil Corporation; Liu Xingfang and Li Jinsong, PetroChina

### INT P5.7 (1606-1609)

*Applications of curvature attributes in reducing drilling risk – a case history*  
Malleswar Yenugu\*, Amit K. Ray, Samir Biswal, and Arindam Dutta, Reliance Industries

### INT P5.8 (1610-1614)

*Optimizing thin-layer mapping through spectral inversion: Performance of genetic algorithms and simulated annealing*  
K. Paola Castaño\*, U Nacional de Colombia, ICP – ECOPEPETROL S.A.; Germán Ojeda, ECOPEPETROL S.A.



## Seismic Applications

### MC 1.1 (1615-1619)

*Extracting density anomalies from converted waves: A case study in the Gulf of Mexico*

Adam Koesoemadinata\* and KeShan Zou, WesternGeco

### MC 1.2 (1620-1624)

*Identifying Jurassic tight gas sands in the East Texas Basin with 3D/3-C seismic data*

Diego Alexander Valentin\* and Robert H. Tatham, U Texas at Austin

### MC 1.3 (1625-1629)

*Time-lapse multicomponent seismic modeling of CO<sub>2</sub> fluid replacement in Redwater Leduc Reef, Alberta*

Taher M. Sodagar\* and Don C. Lawton, U Calgary

### MC 1.4 (1630-1634)

*Time-lapse monitoring carbon-sequestrated brine aquifers: A feasibility study*

Pradip Kumar Mukhopadhyay\*, Subhashis Mallick, Amit Padhi, and Vladimir Alvarado, U Wyoming

### MC 1.5 (1635-1640)

*V<sub>p</sub>/V<sub>s</sub> and shear-wave splitting at the seismogenic plate subduction zone: Insight into effective-stress and pore pressure distribution*

Takeshi Tsuji, Norimitsu Nakata, and Toshifumi Matsuoka, Kyoto U; Jack Dvorkin, Stanford U; Ayako Nakanishi and Shuichi Kodaira, JAMSTEC

### MC 1.6 (1641-1645)

*Estimating pore pressure using compressional- and shear-wave data from multicomponent seismic nodes in Atlantis Field, deepwater Gulf of Mexico*

Jeff C. Kao\* and Robert H. Tatham, U Texas at Austin; Paul E. Murray, Bureau of Economic Geology

### MC 1.7 (1646-1650)

*Quantitative interpretation and joint inversion of multicomponent seismic data: Application to the Sulige gas field, China*

Zhou Yijun\*, Tao Jiaqing, Dou Yisheng, and Deng Zhiwen, BGP; Zhang Xinhua, Changqing Oilfield

### MC 1.8 (1651-1655)

*Joint PP and PS inversion for 3D/3-C seismic data in the Sulige survey*

Xie Wanxue\*, Li Zhong, Sun Jianku, He Guangming, and Wang Hongyan, Sichuan Geophysical Company, CNPC

## Seismic Technologies

### MC 2.1 (1656-1660)

*Technical considerations for converted-wave prestack time migration*

Peter W. Cary\* and Changjun Zhang, Sensor Geophysical

### MC 2.2 (1661-1665)

*Multicomponent OBS and VC acquisition for wavefield reconstruction*

Lasse Amundsen\*, Harald Westerdahl, Mark Thompson, Jon A. Haugen, Arne Reitan, Martin Landrø, and Bjørn Ursin, Statoil Research Center and NTNU

### MC 2.3 (1666-1671)

*Analysis of converted-wave extended images for migration velocity analysis*

Jia Yan and Paul Sava, Colorado School of Mines

### MC 2.4 (1672-1676)

*Up-down deconvolution and subsurface structure: theory, limitations, and examples*

Yi Wang, Sergio Grion, and Richard Bale, CGGVeritas

### MC 2.5 (1677-1681)

*Generation of the reflected S-wave data from air-gun data by using virtual shear sources*

Soocheol Jeong\*, Joongmoo Byun, and Soon Jee Seol, Hanyang U; Dong-Geun Yoo, Korea Institute of Geoscience and Mineral Resources

### MC 2.6 (1682-1686)

*PS-wave statics with near-surface S-wave velocity models*

Zhongyu Huang\*, SINOPEC Exploration and Production Research Institute; Xu Yiming, Yu Bo, and Wang Yujing, SINOPEC Technical Institute of Petroleum Geophysical Prospecting

### MC 2.7 (1687-1692)

*Coupled geomechanical and seismic modeling of compaction-induced traveltimes shifts for multicomponent data*

Steven Smith\* and Ilya Tsvankin, Colorado School of Mines

### MC 2.8 (1693-1697)

*Time-shift angle-domain common image gathers for multiwave*

Qizhen Du\*, Fang Li, and Jianmeng Sun, China U Petroleum



## Multicomponent Seismic Technologies and Applications

### MC P1.1 (1698-1702)

*Availability of Fresnel volume migration to three-component seismic reflection data using tau-P transforms*

Tetsuya Kawabayashi\*, Junichi Takekawa, Tada-nori Goto, and Hitoshi Mikada, Kyoto U; Kyosuke Onishi, Akita U

### MC P1.2 (1703-1707)

*$V_p/V_s$  estimation from poststack P- and PS-wave data*

Gabriel D. Gil\*, U Houston

### MC P1.3 (1708-1713)

*Elastic decomposition with downhole geophones and hydrophones*

Joost van der Neut\*, Nihed El Allouche, and Kees Wapenaar, Delft U Technology

### MC P1.4 (1714-1718)

*Ground-roll attenuation by robust complex polarization analysis*

Chen Haifeng\*, Luo Guoan, Hou Aiyuan, Zhao Guiling, and Lei Na, BGP, CNPC

### MC P1.5 (1719-1723)

*The application of 3D converted-wave seismic data in the Daqing oil field*

Zhide Chen, Liyan Zhang, Li Ang, Yuanping Tong, Guishui Wang, and Jianmin Wang, Exploration and Development Research Institute of Daqing Oil Field Company

### MC P1.6 (1724-1728)

*A practical approach to mode-converted shear-wave velocity analysis from 3-C data*

Zhiwen Deng\*, BGP and U Texas at Austin; Uxin Wang, Geophysical Research Institute of Shengli Oilfield; Mrinal K. Sen, U Texas at Austin; Yong He, Keen Li, Xuming Bai, Xuefeng Zou, and Shitian Cui, BGP

## Case Histories

### MIN 1.1 (1729-1733)

*An analysis of ZTEM data over the Mt. Milligan porphyry copper deposit, British Columbia*

Daniel Sattel\*, EM Solutions; Scott Thomas, Condor Consulting; Michael Becken, GFZ Potsdam

### MIN 1.2 (1734-1738)

*Ground IP resistivity and airborne spectrem and helicopter ZTEM survey results over Pebble copper-moly-gold porphyry deposit, Alaska*

Pascal Paré, Anglo-American Exploration; Jean M. Legault\*, Geotech

### MIN 1.3 (1739-1742)

*Case history: Discovery of the Maria Deposit*

Jules LaJoie, Geophysical Consultant; Syd Visser\*, S. J. V. Consultants

### MIN 1.4 (1743-1747)

*The evolution of the use of geophysics in the search for blind VHMS deposits in the Abitibi greenstone belt, Québec Canada*

Ken Witherly, Condor Consulting; Michel Allard, Xstrata Zinc Canada

### MIN 1.5 (1748-1752)

*Characterization of the Gamsberg deposit from electromagnetic modeling*

Peter Walker\*, Geophysical Algorithms; Ockert Terblanche, Anglo American

### MIN 1.6 (1753-1757)

*3D inversion of airborne gravity gradiometry for iron ore exploration in Brazil*

Cerica Martinez\*, Yaoguo Li, and Richard Krahenbuhl, Colorado School of Mines; Marco Braga, Companhia Vale do Rio Doce

### MIN 1.7 (1758-1762)

*Joint inversion of seismic traveltimes and gravity data on unstructured grids with application to mineral exploration*

Peter G. Lelievre\*, Colin G. Farquharson, and Charles A. Hurich, Memorial U Newfoundland

### MIN 1.8 (1763-1767)

*Using P-wave attenuation to locate water-rich limestone in coal seismic survey*

Guangui Zou\*, Suping Peng, Suzhen Shi, Caiyun Yin, and Li Yuan, State Key Laboratory of Coal Resources and Safe Mining; Bingshou He, The Education Key Lab of Submarine Geosciences and Prospecting Techniques

## New Technology and Processing

### MIN 2.1 (1768-1772)

*NEWDAS — the Newmont distributed IP data acquisition system*

Perry Eaton\*, Bob Anderson, Steve Queen, Ian Mackenzie, and David Wynn, Newmont Mining

### MIN 2.2 (1773-1777)

*Electric field measurements in air*

James Macnae\*, RMIT U

### MIN 2.3 (1778-1783)

*Noise in the processing and application of magnetic gradients*

Leon Foks\*, Kristofer Davis, and Yaoguo Li, Colorado School of Mines

### MIN 2.4 (1784-1788)

*3D joint inversion of gradient and total-field magnetic data*

Kristofer Davis\* and Yaoguo Li, Colorado School of Mines

**MIN 2.5** (1789-1793)

***Rapid gravity and gravity gradiometry terrain correction via adaptive quadtree mesh discretization***

Kristofer Davis, M. Andy Kass\*, and Yaoguo Li, Colorado School of Mines

**MIN 2.6** (1794-1797)

***Feasibility of borehole reflection seismology for hard rock mineral exploration***

Andrew Greenwood\*, Milovan Urosevic, and Roman Pevzner, Curtin U Technology

**MIN 2.7** (1798-1803)

***Inversion of surface and borehole gravity with thresholding and density constraints***

Jiajia Sun\* and Yaoguo Li, Colorado School of Mines

**MIN 2.8** (1804-1809)

***Fast interpretation of self-potential data by DEXP method***

Maurizio Fedi, U Naples Federico II; Mahmoud Abbas, South Valley U

## Cases and Government Surveys

**MIN P1.1** (1810-1814)

***Detecting the occurrence of shallow mining cavities by electrical resistivity imaging method. A study case on the Victoria Cave, Cartagena (SE Spain)***

Pedro Martínez-Pagán\*, Technical U Cartagena; David Gómez-Ortiz and Tomás Martín-Crespo, U Rey Juan Carlos; José Ignacio Manteca, Technical U Cartagena

**MIN P1.2** (1815-1820)

***Elastic seismic wave scattering and imaging of massive sulfides: Rock physics and implications for seismic data acquisition and processing***

E. L. Bongajum\*, I. White, and B. Milkereit, U Toronto

**MIN P1.3** (1821-1825)

***Investigation of P-wave attenuation of massive sulphide and host rocks***

Lubna Y. Khondakar\*, Stephen D. Butt, and Charles A. Hurich, Memorial U Newfoundland

**MIN P1.4** (1826-1829)

***Seismic radio by reverse time mirrors***

Sherif M. Hanafy, Ernesto Curiel, and Gerard T. Schuster, King Abdullah U Science and Technology

**MIN P1.5** (1830-1834)

***Geothermal exploration and exploitation using the microtremor survey method: Methodology and examples***

Peifen Xu\*, Chinese Academy of Sciences; Suqun Ling, Geo-Analysis Institute; Dengming Zhang, Jianguo Du, Xueqiu Xu, and Keqi Ji, Geological Survey of Jiangsu Province; Chuanjin Li, Chinese Academy of Sciences

**MIN P1.6** (1835-1839)

***Nigeria's nationwide high-resolution airborne geophysical surveys***

Stephen W. Reford\* and D. James Misener, Paterson, Grant & Watson; Hernan A. Ugalde, McMaster U; Jacob S. Gana and Olaniyan Oladele, Nigerian Geological Survey Agency

**MIN P1.7** (1840-1844)

***Airborne geophysical mapping of the Australian continent***

Brian Minty\*, Geoscience Australia

**MIN P1.8** (1845-1850)

***A comparative analysis of particle swarm optimization (PSO) and very fast simulated annealing (VFSA) inversion techniques for self-potential (SP) anomalies***

Vishal Das\*, Arnab Ghosal, and Shalivahan, Indian School of Mines; Bimalendu B. Bhattacharya and S. N. Bose, National Centre for Basic Sciences

## Methodological Developments and Case Studies

**NS 1.1** (1851-1855)

***Imaging lateral heterogeneity at Coronation Field with surface waves***

Matthew M. Haney\*, Boise State U; Huub Douma, ION Geophysical/GXT Imaging Solutions

**NS 1.2** (1856-1860)

***Imaging challenges caused by gas-induced scatterers in the Bohai PL19-3 area***

Xianhuai Zhu, Kirk Wallace, Phil Anno, Qingrong Zhu, Richard Day, Nan Ma, Craig Hartline, Yunqing Shen, and Robert Hofer, ConocoPhillips

**NS 1.3** (1861-1865)

***Hybrid raypath interferometry: Correcting converted-wave receiver statics***

David C. Henley\*, U Calgary

**NS 1.4** (1866-1870)

***Guided waves in GPR data: Depth imaging and analysis of phase and group velocities***

Kathryn T. Decker\* and Matthew M. Haney, Boise State U

**NS 1.5** (1871-1876)

*Rayleigh wave dispersion curve inversion: Occam versus the L1-norm*  
Matthew M. Haney\* and Leming Qu, Boise State U

**NS 1.6** (1877-1881)

*Effect of the overlying sedimentary sequence on the seismic imaging of the bedrock surfaces: McHenry County, Illinois*  
Ahmed Ismail\* and Jason Thomason, U Illinois Urbana-Champaign

**NS 1.7** (1882-1886)

*In-situ soil properties from the integrated poroelastic models*  
Alimzhan Zhubayev\* and Ranajit Ghose, Delft U Technology

**NS 1.8** (1887-1891)

*Joint use of seismic surface waves and multioffset GPR for sandy soil characterization*  
Alberto Godio\*, Politecnico di Torino; Georgios Tsoflias, U Kansas; Claudio Piatti, Roberto Rege, and Valentina Socco, Politecnico di Torino

## Surface Waves

**NS 2.1** (1892-1896)

*Exploiting surface consistency for ground-roll characterization and mitigation*  
Christine E. Krohn\* and Partha S. Routh, ExxonMobil Upstream Research Co

**NS 2.2** (1897-1901)

*Using surface-wave methods for static corrections: A near-surface study at Spring Coulee*  
Khaled Al Dulaijan\*, Saudi Aramco; Robert R. Stewart, U Houston

**NS 2.3** (1902-1907)

*Multimode inversion of multichannel analysis of surface waves (MASW) dispersion curves and high-resolution linear radon transform (HRLRT)*  
Julian Ivanov\*, Richard D. Miller, Jianghai Xia, and Shelby Peterie, U Kansas

**NS 2.4** (1908-1913)

*Estimation of near-surface quality factors by inversion of Rayleigh-wave attenuation coefficients*  
Jianghai Xia\*, Richard D. Miller, Julian Ivanov, and Shelby Peterie, U Kansas

**NS 2.5** (1914-1918)

*Simultaneous joint inversion of refracted and surface waves*  
Simone Re\*, Claudio Strobbia, Michele De Stefano, and Massimo Virgilio, WesternGeco

**NS 2.6** (1919-1923)

*Surface-wave eikonal tomography in a scattering environment*  
Pierre Gouedard\*, Huajian Yao, and Robert D. van der Hilst, MIT; Arie Verdel, Shell International Exploration & Production

**NS 2.7** (1924-1928)

*Surface-wave dispersion curve calculation in TIV medium*  
Ganpan Ke\*, Hefeng Dong, and Zhengliang Cao, Norwegian U Science and Technology; Lanbo Liu, U Connecticut

**NS 2.8** (1929-1933)

*Surface wave analysis for S-wave static correction computation*  
Laura Valentina Socco\*, Daniele Boiero, Sebastiano Foti, Margherita Maraschini, Claudio Piatti, Paolo Bergamo, and Flora Garofalo, Politecnico di Torino, Mauro Pastori, and Gilbert Del Molino, eni — e&p division.

## Methodological Studies and Applications

**NS 3.1** (1934-1938)

*The nonseismic data and joint inversion strategy for the near-surface solution in Saudi Arabia*  
Daniele Colombo\* and Tim Keho, Saudi Aramco EXPEC Advanced Research Center

**NS 3.2** (1939-1943)

*Geostatistical inversion of seismic and GPR reflection images: What can we actually resolve?*  
James Irving, U Guelph; Klaus Holliger\*, U Lausanne

**NS 3.3** (1944-1949)

*On the use of a fractal equivalent circuit model to predict the geotechnical properties of soils*  
Fred Boadu\* and Frederick Owusu-Nimo, Duke U

**NS 3.4** (1950-1954)

*Inversion of time-lapse electrical resistivity imaging data for monitoring infiltration*  
Vanessa Mitchell\*, Stanford U; Adam Pidlisecky, U Calgary; Rosemary Knight, Stanford U

**NS 3.5** (1955-1959)

*A radar interpretation pitfall: Velocity push-down due to a footwall loess wedge in the ground penetrating radar imaging of the Ostler Fault, New Zealand*

David C. Nobes\*, Sharon M. Hornblow, and Jonathan J. Lapwood, U Canterbury

**NS 3.6** (1960-1964)

*Ultra-shallow seismic imaging of the top of the saturated zone*

Steven D. Sloan\*, US Army Engineer Research and Development Center; Georgios P. Tsoulias, and Don W. Steeples, U Kansas; Jason R. McKenna, US Army ERDC

**NS 3.7** (1965-1969)

*Preliminary results for a near-surface 3D seismic survey of a geothermal system in Colorado*

Andrew P. Lamb\*, Kasper van Wijk, and Lee Liberty, Boise State U; Andre Revil, Kyle Richards, and Michael Batzle, Colorado School of Mines

**NS 3.8** (1970-1974)

*Seismic profile of the Huangzhuang-Gaoliying fault in Beijing by the Mini-Sosie method*

Xu Chang and Yike Liu\*, Chinese Academy of Sciences; Hongchuan Sun, U Utah

## Methodological Studies and Applications I

**NS P1.1** (1975-1979)

*Near-surface velocity estimation by weighted early-arrival waveform inversion*

Xukai Shen\*, Stanford U

**NS P1.2** (1980-1984)

*Refraction tomography statics without ray tracing for rugged topography*

Hu Ziduo\*, Wang Xiwen, Wang Shujiang, Wang Yuchao, and Yong Yundong, Petrochina

**NS P1.3** (1985-1989)

*$V_p$  versus  $V_s$  to characterize the shallow subsurface*

Michela Giustiniani\*, Flavio Accaino, and Umberta Tinivella, Istituto Nazionale di Oceanografia e di Geofisica Sperimentale

**NS P1.4** (1990-1992)

*Geohazards of seismically triggered submarine slides in Kingston, Jamaica: An initial report*

Katie Delbecq\*, Matthew Hornbach, and Paul Mann, U Texas at Austin; Lyndon Brown, U Technology, Jamaica

**NS P1.5** (1993-1998)

*3D design for a near-surface seismic reflection investigation*

Brian E. Miller\*, George P. Tsoulias, and Don W. Steeples, U Kansas

**NS P1.6** (1999-2003)

*Control point uniformity analysis in near-surface structure investigation*

Bai Xuming\*, Deng Zhiwen, Zhang Xueying, Chen Jingguo, Tang Chuanzhang, Zhang Denghao, and Teng Yongzhen, BGP

**NS P1.7** (2004-2008)

*Impact analysis of uphole time on refraction statics and its solutions*

Feng Zeyuan\* and Xu Hao, BGP

**NS P1.8** (2009-2013)

*Geophysics and rock-mechanic test for dredging in the Arthur Kill Channel, New York*

William F. Murphy III\*, W. Bruce Ward, Beckett Boyd, William Murphy IV, Richard Nolen-Hoeksema, Matthew Art, and Daniel A. Rosales R., e4sciences | Earthworks

## Methodological Studies and Applications II

**NS P2.1** (2014-2018)

*Characterizing the Arbuckle-Simpson aquifer through electrical methods*

Kumar Ramachandran\*, Bryan Tapp, Tayler Rigsby, and Erin Lewallen, U Tulsa

**NS P2.2** (2019-2023)

*Signal response characteristics of surface NMR with separated loops*

Gong Sheng-ping \*, Institute of Geophysical and Geochemical Exploration; Li Zhen-yu, China U Geosciences

**NS P2.3** (2024-2028)

*Application of high-resolution resistivity imaging for railway near-surface investigation in SW China: Two case histories*

Li Jian, Lei Xuyou, and Wei Zhenhua, China Railway Eryuan Engineering Group; He Lanfang, and Zhang Zhenheng, BGP

**NS P2.4** (2029-2033)

*Using seismic surface waves generated by motor vehicles to find voids: Field results*

Yang Zhao\* and James W. Rector, U California, Berkeley

**NS P2.5** (2034-2038)

*Higher modes of surface waves in microtremor analysis*

Tatsunori Ikeda\*, Toshifumi Matsuoka, and Takeshi Tsuji, Kyoto U; Koichi Hayashi, Oyo

**NS P2.6** (2039-2043)

*S-wave velocity from ground roll inversion: Source-receiver tests and statics*

Soumya Roy\* and Robert R. Stewart, U Houston

**NS P2.7** (2044-2048)

*Near-surface borehole geophysical imaging in a highly structured area, Beartooth Mountains, Montana*

Tania Mukherjee and Robert R. Stewart, U Houston

## Microseismicity I

### **PSC 1.1** (2049-2053)

*Time reverse characterization of sources in 2D and 3D heterogeneous media*

Erik H. Saenger\*, ETH Zurich and Spectraseis; Georg K. Kocur, ETH Zurich

### **PSC 1.2** (2054-2058)

*Ocean-bottom seismic (OBS) timing drift correction using passive seismic data*

Paul Hatchell\* and Kurang Mehta, Shell International Exploration and Production

### **PSC 1.3** (2059-2064)

*Passive icemology: Fracture and model characterization using microseismicity*

T. Dylan Mikesell\*, Kasper van Wijk, Matt M. Haney, and John H. Bradford, Boise State U

### **PSC 1.4** (2065-2069)

*Single versus multiwell microseismic recording: What effect monitoring configuration has on interpretation*

Margeret Seibel\*, Adam Baig, and Ted Urbancic, Engineering Seismology Group

### **PSC 1.5** (2070-2074)

*Microseismic imaging from a single geophone: KTB*

Anton Reshetnikov\*, Joern Kummerow, Stefan Buske, and Serge A. Shapiro, Freie U at Berlin

### **PSC 1.6** (2075-2079)

*Techniques to estimate fracture effectiveness when mapping low-magnitude microseismicity*

Sherilyn Williams-Stroud\*, MicroSeismic; Randal L. Billingsley, Tracker Resource Development

### **PSC 1.7** (2080-2084)

*Characterization of microseismic data in gas shales using the radius of gyration tensor*

Colin M. Sayers\* and Joel Le Calvez, Schlumberger

### **PSC 1.8** (2085-2089)

*Quantitative interpretation of major planes from microseismic event locations with application in production prediction*

M. J. Williams\*, B. Khadhraoui, and I. Bradford, Schlumberger Cambridge Research

## Microseismicity II

### **PSC 2.1** (2090-2094)

*Evaluating low-frequency passive seismic data against an exploration well program*

Paul West\* and Konrad Cieslik, Spectraseis; Shamim Haider, Abdul Aziz Muhamad, Sandeep Kumar Chandola, and Awalludin Harun, Petronas

### **PSC 2.2** (2095-2099)

*Surface seismic to microseismic: An integrated case study from exploration to completion in the Montney shale of NE British Columbia, Canada*

Mark Norton\* and Wayne Hovdebo, Progress Energy Resources; David Cho, Mike Jones, and Shawn Maxwell, Schlumberger

### **PSC 2.3** (2100-2104)

*Analysis of nanoseismicity during laboratory hydraulic fracturing experiments*

Camilo Moreno, Yashwanth Chitrala\*, Carl Sondergeld, and Chandra Rai, U Oklahoma

### **PSC 2.4** (2105-2109)

*Moment tensor analysis and comparison of acoustic emission data with synthetic data from the spectral element method*

Volker Oye\* and Hom Nath Gharti, NORSAR; Eyvind Aker, NGI; Daniela Kühn, NORSAR

### **PSC 2.5** (2110-2114)

*Natural fracture characterization from microseismic source mechanisms: A comparison with FMI data*

Jo Ellen Kilpatrick\*, Leo Eisner, Sherilyn Williams-Stroud, and Brian Cornette, Microseismic; Morris Hall, Williams

### **PSC 2.6** (2115-2119)

*Identifying reservoir injection parameters using SMT analysis of microseismicity*

Adam Baig and Ted Urbancic, Engineering Seismology Group

### **PSC 2.7** (2120-2124)

*Not a shot in the dark: Low-cost demonstration of microseismic feasibility in a high-risk environment*

Alan Waldron, Santos; Julie Shemeta, MEQ Geo; Emmanuel Gaucher, Magnitude; Suzanne Hunt, Dennis Cooke, and Simon Chipperfield, Santos

### **PSC 2.8** (2125-2129)

*Interpretation of microseismicity induced by time-dependent injection pressure*

Carsten Dinske\* and Serge Shapiro, Freie U at Berlin; Markus Haring, Geothermal Explorers

## Microseismicity

### **PSC P1.1** (2130-2134)

*Anisotropic velocity modeling for microseismic processing: Part 1, Impact of velocity model uncertainty*

S. C. Maxwell\*, L. Bennett, M. Jones, and J. Walsh, Schlumberger

### **PSC P1.2** (2135-2139)

*Anisotropic velocity modeling for microseismic processing: Part 2, Fast and accurate model calibration with a crosswell source*

Craig Woerpel\*, Schlumberger

### **PSC P1.3** (2140-2145)

*Toward a near real-time system for event hypocenter and source mechanism recovery via compressive sensing*

Ismael Vera Rodriguez\*, Mauricio D. Sacchi, and Yu J. Gu, U Alberta

### **PSC P1.4** (2146-2150)

*Real-time detection and localization of microseismic events*

Bassem Khadhraoui\*, David Leslie, Julian Drew, and Rob Jones, Schlumberger

### **PSC P1.5** (2151-2155)

*Global optimization of data quality checks on 2D and 3D networks of GPR crosswell tomographic data for automatic correction of unknown well deviations*

Douglas S. Sassen\* and John E. Peterson, Lawrence Berkeley National Laboratory

### **PSC P1.6** (2156-2160)

*Estimates of hydraulic transport parameters using microseismicity induced by nonlinear fluid-rock interaction*

N. Hummel\* and S. A. Shapiro, Freie U, Berlin

### **PSC P1.7** (2161-2165)

*Inversion and attribute-assisted hydraulically induced microseismic fracture prediction: A North Texas Barnett Shale case study*

Xavier E. Refunjol\*, Katie M. Keranen, and Kurt J. Marfurt, U Oklahoma

### **PSC P1.8** (2166-2170)

*Reflection imaging using microseismic multiplets as a source*

Keita Tamakawa\*, Hiroshi Asanuma, and Hiroaki Niitsuma, Tohoku U; Nobukazu Soma, Institute for Geo-Resources and Environment, AIST

## Locating Microseismic Sources

### **PSC P2.1** (2171-2175)

*Comparison of 2D and 3D time reverse modeling for tremor source localization*

Brian Steiner, Spectraseis; Erik H. Saenger, ETH Zurich and Spectraseis

### **PSC P2.2** (2176-2180)

*Signal-to-noise estimates of time-reverse images*

Ben Witten\* and Brad Artman, Spectraseis

### **PSC P2.3** (2181-2185)

*Localization of seismic events in 3D media by diffraction stacking*

Oksana Zhebel\*, Dirk Gajewski, and Claudia Vanelle, U Hamburg

### **PSC P2.4** (2186-2190)

*Microseismic hypocenter location using nonlinear optimization*

Joe Wong\*, Lejia Han, and John C. Bancroft, U Calgary

### **PSC P2.5** (2191-2195)

*Sensitivity of locating of a microseismic event when using analytic solutions and the first arrival times*

John C. Bancroft\*, Joe Wong, and Lilly Han, Crewes, U Calgary

### **PSC P2.6** (2196-2200)

*Localization of microseismic events using head waves and direct waves*

Ulrich Zimmer\*, Pinnacle

### **PSC P2.7** (2201-2206)

*Feasibility of identifying microseismic events at the geothermal system of Mt. Princeton using surface passive seismic data*

Farnoush Forghani-Arani and Mike Batzle, Colorado School of Mines; Jyoti Behura, BP America

### **PSC P2.8** (2207-2211)

*A passive low-frequency seismic survey case study – Shaheen project part II*

B. Birkelo\*, M. Duclos, B. Artman, B. Schechinger, B. Witten, and A. Goertz, Spectraseis AG; M.T. Hadidi, ADCO



## New Method Applications

### **RC P1.1** (2212-2216)

*Geopressure prediction for carbonated rock below salt: Turkmenistan example, Amudarin block*

Shen Kefei\*, Zhan Qinghong, and Sun Lin, BGP; Lv Gongxun, Liu Henian, Wu Lei, and Chen Yequan, CNPC International (Turkmenistan)

### **RC P1.2** (2217-2220)

*Regional pressure compartmentalization preview using pore-pressure approach: A case study from Northeast India*

Y. Ranjeet Singh, Metilda Pereira, R. K. Srivastava, P. K. Paul, and R. Dasgupta, Oil India

### **RC P1.3** (2221-2225)

*Calibration of seismic attributes to identify carbonate rocks in a frontier basin of offshore Colombia*

Leydy Valencia\*, Convenio UIS-ICP; Andrés Calle ECOPEPETROL-ICP; María Plata, UT EOS-DTH

### **RC P1.4** (2226-2230)

*3D acoustic impedance and porosity mapping from seismic inversion and neural networks*

Emilson Pereira Leite\*, Alexandre Campana Vidal, Juliana Finoto Bueno, and Rodrigo Drummond Couto Duarte, U Campinas

### **RC P1.5** (2231-2235)

*Volume curvature attributes to identify subtle faults and fractures in carbonate reservoirs: Cimarrona Formation, Middle Magdalena Valley Basin, Colombia*

Luis Bravo\* and Milagrosa Aldana, Simón Bolívar U

### **RC P1.6** (2236-2239)

*Application of LMR inversion and clustering analysis in the Barnett Shale*

Roderick Perez\*, U Oklahoma

### **RC P1.7** (2240-2244)

*High-resolution thin reservoir prediction in the Andian area, Biyang Depression*

Fanchang Zhang, Shixin Zhang, and Xingyao Yin, China U Petroleum

### **RC P1.8** (2245-2250)

*Comprehensive petro-elastic modeling aimed at quantitative seismic reservoir characterization and monitoring*

Alireza Shahin\*, Robert H. Tatham, Paul L. Stoffa, and Kyle T. Spikes, U Texas at Austin

## Case Studies

### **RC 1.1** (2251-2255)

*3D sequence stratigraphy and reservoir delineation in Block H of the Chad Basin*

Li Jianying \*, Li Bao, Liu Zhipend, Guo Hongjuan, and Liang Jinhui, BGP

### **RC 1.2** (2256-2260)

*Seismic reservoir characterization of the Morrow A Sandstone, Postle Field, Oklahoma*

Thomas L. Davis\* and Robert D. Benson, Colorado School of Mines; Scott Wehner, Michael Raines, and Roger Freidline, Whiting Oil and Gas

### **RC 1.3** (2261-2264)

*Reservoir prediction using Poisson impedance in Qinhuangdao, Bohai Sea*

Qinglong Xia, Lixin Tian, and Donghong Zhou, CNOOC; Guikang Lin and Longcong Jiang\*, Beijing Intseis Solutions

### **RC 1.4** (2265-2269)

*Improved reservoir characterization using prestack analyses, Eden Yuturi Field, Ecuador*

Nicholas K. Boyd\*, Halliburton Consulting; Mario Cardenas and Milton Galarraga, Petroamazonas

### **RC 1.5** (2270-2273)

*Eagle Ford shale prospecting with 3D seismic data*

Galen Treadgold\* and Bill McLain, Weinman GeoScience/Global Geophysical; Steven Sinclair, Matador Resources

### **RC 1.6** (2274-2278)

*Application of carbonate reef-shoal reservoir identification technology in the Sichuan Basin*

Ji Xuewu BGP, CNPC and China U Geosciences; Zhang Yanqing, Zang Dianguang, Huang Chuanli, Feng Xukui, Xu Ligui, and Shen ping, BGP; Han Chong, Chengdu U Technology

### **RC 1.7** (2279-2283)

*Seismic gas hydrate quantification using cumulative attributes (CATs) at Milne Point, Arkansas*

Anyela Morcote\*, Uwe Strecker, and Scott Singleton, OHM Rock Solid Images

### **RC 1.8** (2284-2288)

*Permeability prediction and its impact in reservoir modeling, Postle Field, Oklahoma*

Crucelis "Cucha" López\* and Thomas L. Davis, Colorado School of Mines



## Fluid and Reservoir Delineation

### **RC 2.1** (2289-2293)

*Seismic-based pore-pressure prediction in a west Kuwait field*  
Rajive Kumar\*, Mariam A. Al-Saeed, Jassim M. Al-Kandiri, Naveen K. Verma and Fawaz Al-Saqran, Kuwait Oil Company

### **RC 2.2** (2294-2298)

*Seismic characterization of the Nisku Formation in the Wabamun area, Alberta, Canada for large-scale CO<sub>2</sub> sequestration*  
Abdullah Alshuhail\*, Don Lawton, and Helen Isaac, U Calgary

### **RC 2.3** (2299-2303)

*Porosity estimation from seismic data at Dickman Field, Kansas for carbon sequestration*  
Son Phan\* and Mrinal K. Sen, U Texas at Austin

### **RC 2.4** (2304-2308)

*Seismic analysis and characterization of a brine reservoir for CO<sub>2</sub> sequestration*  
Mark Sparlin\*, Jeff Meyer, Dimitri Bevc, Raul Cabrera, Todd Hibbitts, and John Rogers, Fusion Petroleum Technologies

### **RC 2.5** (2309-2313)

*Study and application of carbonate reservoir characterization in Block B on the eastern margin of the Pre-Caspian Basin*  
Chen Hongtao\*, Li Jianying, Yang Feng, and Guo Hongjuan, BGP

### **RC 2.6** (2314-2318)

*Dolomite reservoir delineation by integrating paleotopography and seismic attribute analysis*  
Yandong Li\*, Wei Liu, Xiaodong Zheng, and Yan Zhang, PetroChina

### **RC 2.7** (2319-2322)

*The prediction method of carbonate fractured reservoir using seismic data*  
Tuanyu Teng\*, Huquan Zhang, Hongbin Wang, Haifeng Cui, PetroChina Research Institute of Petroleum Exploration and Development-Northwest

### **RC 2.8** (2323-2328)

*Correlating heterogeneous production to seismic curvature attributes in an Australian coalbed methane field*  
Jeremy C. Fisk\* and Kurt J. Marfurt, U Oklahoma; Dennis Cooke, Santos

## New Method Applications I

### **RC 3.1** (2329-2333)

*Research and application of seismic facies analysis based on the empirical mode decomposition*  
Liu Qingmin, Yang Wuyang, and Tian Lianyu, CNPC

### **RC 3.2** (2334-2339)

*Reservoir characterization and inversion uncertainty via a family of particle swarm optimizers*  
Juan Luis Fernández-Martínez, Stanford U and Oviedo U; Tapan Mukerji\*, Stanford U; Esperanza García-Gonzalo, Oviedo U; Amit Suman, Stanford U

### **RC 3.3** (2340-2345)

*Sensitivity analysis of fracture scattering*  
Xinding Fang\*, Michael Fehler, Tianrun Chen, and D. R. Burns, MIT Earth Resources Laboratory

### **RC 3.4** (2346-2350)

*Simulating models using geological bases, well logs, and seismic attributes*  
Juan Luis Fernández Martínez, UC Berkeley, Stanford, and Oviedo U; Siamak Nazari\*, UC Berkeley; Zulima Fernández Muñoz, Oviedo U; James W. Rector III, UC Berkeley

### **RC 3.5** (2351-2355)

*A probabilistic approach to 3D joint estimation of reservoir properties based on Gaussian mixture models*  
Dario Grana\* and Alessandro Amato del Monte, Eni E&P; Jack Dvorkin, Stanford U

### **RC 3.6** (2356-2360)

*Modeling distribution of geological properties using local continuity directions*  
Marko Maucec\*, Derek Parks, Maurice Gehin, Genbao Shi, Jeffrey Yarus, and Richard Chambers, Halliburton/Landmark

### **RC 3.7** (2361-2365)

*Mapping of diagenesis in a carbonate reservoir in the Gulf of Mexico by a stochastic data integration technique*  
Sanjay Srinivasan\* and Mrinal K. Sen, U Texas at Austin

### **RC 3.8** (2366-2370)

*Stochastic simulation of fault networks from 2D seismic lines*  
Nicolas Cherpeau\*, and Guillaume Caumon, Nancy U; Bruno Lévy, Institut National de Recherche en Informatique et Automatique

## New Method Applications II

### **RC 4.1** (2371-2375)

#### *Impact of the dual-sensor acquisition on reservoir characterization studies*

Cyrille Reiser\* and Christophe Ribeiro, PGS

### **RC 4.2** (2376-2380)

#### *Application of narrow-azimuth seismic data in metamorphic fractured reservoir prediction*

Lixin Tian, Jun Ming\*, and Pingping Zhang, China National Offshore Oil Corporation

### **RC 4.3** (2381-2385)

#### *4D seismic acquisition feasibility and technology study in the SY region*

Wang Dan\*, Liu Bing, Sun Xiuying, Yang Dawei, and Gao Jun, BGP

### **RC 4.4** (2386-2390)

#### *Case studies on hydrocarbon prediction using a wavelet-based spectrum and spectrum-attenuation approach*

Donghong Zhou, CNOOC; Zhifang Fu, SINOPEC; Ping An\*, GeoCyber Solutions

### **RC 4.5** (2391-2395)

#### *Detecting hydrocarbons in carbonates: Joint interpretation of CSEM and seismic*

Femke Vossepoel\*, Mathieu Darnet, Stéphane Gesbert, and Ezequiel Gonzalez, Shell Projects and Technology; Folkert Hindriks and Roseleen Kelly, Shell Olie og Gasudvinding; Alessandro Sandrin, Line Jensen, and Anette Uldall, Maersk Olie og Gas AS

### **RC 4.6** (2396-2400)

#### *Limitations of deterministic seismic inversion data as input for reservoir model conditioning*

Ashley Francis, Earthworks Environment & Resources

### **RC 4.7** (2401-2405)

#### *Principal component analysis for stratigraphic imaging improvement and facies predictions*

Maria V. Brito\*, U Houston

### **RC 4.8** (2406-2410)

#### *Changing scale and domain of a petrophysical and elastic properties based log-facies classification*

Francesca Maffioletti\*, Silvia Bardini, Dario Grana, Enrico Paparozzi, Livio Ruvo, Claudio Sala, and Cristiano Tarchiani, eni E&P

## Modeling and Computations

### **RP 1.1** (2411-2415)

#### *Modeling elastic properties of sands and sandstones*

Lev Vernik\*, Marathon; Mark Kachanov, Tufts U

### **RP 1.2** (2416-2420)

#### *Rock physics model of glauconitic greensand from the North Sea*

Zakir Hossain\*, Technical U Denmark; Tapan Mukerji, Stanford Center for Reservoir Forecasting; Jack Dvorkin, Stanford Rock Physics Laboratory; Ida L. Fabricius, Technical U Denmark

### **RP 1.3** (2421-2425)

#### *Generalized Backus theory for poroelastic solids*

Fabian Krzikalla\*, Fraunhofer ITWM; Tobias Muller, CSIRO

### **RP 1.4** (2426-2430)

#### *Role of contact heterogeneities on macroscopic elastic properties of granular media*

Ratnanabha Sain\* and Gary Mavko, Stanford Rock Physics Laboratory; Tapan Mukerji, Stanford Center for Reservoir Forecasting

### **RP 1.5** (2431-2435)

#### *Modeling pore-stiffness effects in the Middle Bakken Siltstone*

Kyle Spikes\*, U Texas at Austin

### **RP 1.6** (2436-2440)

#### *Applications of deterministic and stochastic rock physics modeling to anisotropic velocity model building*

Ran Bachrach, WesternGeco and Tel Aviv U

### **RP 1.7** (2441-2446)

#### *Rock physics workflows for exploration in frontier basins*

Mario A. Gutierrez\*, BHP Billiton Petroleum; Jack Dvorkin, Stanford U

### **RP 1.8** (2447-2451)

#### *On the fluid dependence of rock compressibility: Biot-Gassmann revised*

Leon Thomsen\*, Delta Geophysics

## Laboratory Measurements

### **RP 2.1** (2452-2458)

*Laboratory measurements of resistivity and velocity for Fontainebleau sandstones*

Carmen T. Gomez\*, Jack Dvorkin, and Tiziana Vanorio, Stanford U

### **RP 2.2** (2459-2463)

*Improvement of density model for oils*

De-hua Han\*, U Houston; Jiajin Liu, China U Petroleum; Min Sun, U Houston

### **RP 2.3** (2464-2469)

*Comparison of velocity prediction models for fully saturated carbonate rocks*

Aiman M. Bakhorji\* and Douglas R. Schmitt, U Alberta

### **RP 2.4** (2470-2474)

*Light oil measurement: density, velocity and modulus from 23 to 200°C and at pressures up to 150 MPa*

De-hua Han\*, Min Sun, and Qiuliang Yao, U Houston; Jiajin Liu, China U Petroleum

### **RP 2.5** (2475-2479)

*Advances in experimental research of induced polarization effect in reservoir rocks*

Vladimir Burtman\*, Alexander V. Gribenko, and Michael S. Zhdanov, Technoimaging and The U Utah

### **RP 2.6** (2480-2485)

*Seismic velocities from experimental compaction: New porosity and velocity-depth relations for sands with different textural and mineralogical composition*

Manzar Fawad\*, Nazmul Haque Mondol, Jens Jahren, and Knut Bjørlykke, U Oslo

### **RP 2.7** (2486-2490)

*3-C laboratory ultrasound: A new method for measuring elastic anisotropy of rocks*

Maxim Lebedev\*, Andrej Bona, Roman Pevzner, and Boris Gurevich, Curtin U Technology

### **RP 2.8** (2491-2495)

*Advances in laboratory modeling of wave propagation*

Thomas E. Blum\* and Kasper van Wijk, Boise State U

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*Quantitative calibration of rock-physics models*

Bernardo Moyano\*, Erling Hugo Jensen, and Tor Arne Johansen, U Bergen

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*Velocity to resistivity transform via porosity*

Folke Engelmark\*, Petroleum Geo-Services Asia Pacific

### **RP 3.3** (2506-2511)

*Predicting sorting and sand/shale ratio from seismic attributes by integrating sequence stratigraphy and rock physics*

Tanima Dutta\*, ExxonMobil Exploration Company; Tapan Mukerji, Stanford Center for Reservoir Forecasting; Gary Mavko, Stanford Rock Physics Laboratory

### **RP 3.4** (2512-2516)

*Effect of heavy oil reservoir rock texture on the  $V_p/V_s$  ratios derived from logs*

Carmen C. Dumitrescu\* Sensor Geophysical; Larry Lines, U Calgary

### **RP 3.5** (2517-2521)

*An analytical model for stress-induced anisotropy of a cracked solid*

Boris Gurevich\*, Curtin U Technology and CSIRO Earth Science and Resource Engineering; Marina Pervukhina, CSIRO Earth Science and Resource Engineering

### **RP 3.6** (2522-2526)

*A full-frequency band Kuster-Toksöz model and its application in velocity dispersion analysis*

Haiyang Wang\* and Sam Zandong Sun, China U Petroleum

### **RP 3.7** (2527-2531)

*CO<sub>2</sub> injection induced dispersion and attenuation*

Shuang-quan Chen, Andy Chadwick, and Xiang-yang Li, British Geological Survey

### **RP 3.8** (2532-2536)

*Acoustic imaging of hydraulic fracture evolution: Rock physics, laboratory scale*

C. Meng, Delft U Technology, and C. J. de Pater, StrataGen Delft

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#### *Velocity dispersion measurements on micro-cracked and fluid-saturated rock*

Heather Schijns\* and Douglas R. Schmitt, U Alberta; Ian Jackson, Australian National U

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Weiwei Li\* and Laura J. Pyrak-Nolte, Purdue U

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#### *Frequency dependent elastic properties and attenuation in heavy-oil sands: comparison between measured and modeled data*

Agnihya Das\* and Michael Batzle, Colorado School of Mines

### **RP 4.4** (2552-2556)

#### *Rock physics modeling of the frequency dispersion in bitumen-saturated sands*

Ganpan Ke\* and Hefeng Dong, Norwegian U Science and Technology; Merrick H. Johnston, Statoil

### **RP 4.5** (2557-2563)

#### *Velocity dispersion of P-waves in sandstone and carbonate: Double-porosity and local fluid flow theory*

\*Jing Ba, Hong Cao, and Fengchang Yao, PetroChina

### **RP 4.6** (2564-2569)

#### *Finite-element modeling of seismic attenuation due to fluid flow in partially saturated rocks*

Beatriz Quintal\*, ETH Zurich; Holger Steeb, Ruhr-U Bochum; Marcel Frehner, U Vienna; Stefan M. Schmalholz, ETH Zurich

### **RP 4.7** (2570-2574)

#### *Effects of fracture scale on P-wave attenuation: A physical modeling study*

Zhiheng Yin \*, Jianxin Wei, and Bangrang Di, China U Petroleum; Xiangyang Li, British Geological Survey

### **RP 4.8** (2575-2579)

#### *Fluid-wave regimes in a fracture filled with viscous fluid*

Valeri Korneev, Lawrence Berkeley National Laboratory

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Ran Bachrach, WesternGeco and Tel Aviv U

### **RP 5.2** (2585-2589)

#### *Trends in microcrack properties and reconstruction of TI elasticity tensors of shales*

Marina Pervukhina\*, CSIRO ESRE; Boris Gurevich, Curtin U Technology, CSIRO ESRE; Pavel Golodoniuc and David N. Dewhurst, CSIRO ESRE

### **RP 5.3** (2590-2594)

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Utpalendu Kuila\* and Manika Prasad, Colorado School of Mines

### **RP 5.4** (2595-2599)

#### *Prediction of shale mechanical properties from global and local empirical correlations*

David N. Dewhurst, Joel Sarout, and Claudio Delle Piane, CSIRO Shale Research Centre and CSIRO Earth Science and Resource Engineering, Perth; Anthony F. Siggins, CSIRO Shale Research Centre and CSIRO Earth Science and Resource Engineering, Melbourne; Mark D. Raven, CSIRO Shale Research Centre and CSIRO Land and Water, Adelaide; Utpalendu Kuila, Colorado School of Mines

### **RP 5.5** (2600-2605)

#### *Anisotropic elastic moduli of the Mancos B Shale: An experimental study*

Rituparna Sarker\* and Mike Batzle, Colorado School of Mines

### **RP 5.6** (2606-2611)

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Colin M. Sayers\*, Schlumberger

### **RP 5.7** (2612-2616)

#### *Mineralogy and its contribution to anisotropy and kerogen stiffness variations with maturity in the Bakken Shales*

Kenechukwu Mba\* and Manika Prasad, Colorado School of Mines

### **RP 5.8** (2617-2621)

#### *Stress-induced seismic velocity anisotropy study*

Bin Qiu, Mita Sengupta, and Jorg Herwanger, WesternGeco

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Tobias M. Müller\*, CSIRO Earth Science and Resource Engineering; Pratap N. Sahay, CICESE Department of Seismology

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Yasser Metwally and Evgeny M. Chesnokov, U Houston

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Evgeny M. Chesnokov, U Houston; Irina O. Bayuk\*, Russian Academy of Sciences; Yasser Metwally, U Houston

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#### *Permeability evaluation from microseismic data (laboratory study).*

S. B. Turuntaev\*, E. V. Zenchenko, and E. I. Eremeeva, Russian Academy of Sciences

### **RP 6.5** (2644-2648)

#### *An assessment of the use of the Kozeny-Carman relationship to estimate permeability in anisotropic materials from NMR data*

Katherine Dlubac\* and Rosemary Knight, Stanford U

### **RP 6.6** (2649-2653)

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J. J. Wampler, C. H. Sondergeld, and C. S. Rai, U Oklahoma; O. Abdelghany, U Al-Ain

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#### *Carbonate facies and permeability estimation using rock physics and flow-zone facies*

Tim Pritchard, Cinzia Scotellaro, and Robert Webber\*, BG Group

### **RP 6.8** (2659-2663)

#### *Anomalous sonic velocities in the formation containing multiphase fluids*

Takahito Banno, Hitoshi Mikada, Tada-nori Goto, and Junnichi Takekawa, Kyoto U; Kyosuke Onishi, Akita U

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Zhong Wang, Norwegian Geotechnical Institute; Leiv-J. Gelius, U Oslo

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Osni Bastos de Paula\*, Curtin U and Petrobras-Petroleo Brasileiro; Marina Pervukhina, CSIRO; Boris Gurevich, Curtin U and CSIRO

### **RP P1.3** (2675-2680)

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Claudio Madonna\*, Nicola Tisato, and Sébastien Boutareaud, ETH Zurich; David Mainprice, U Montpellier

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### **RP P1.5** (2686-2691)

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Mohammad Monzurul Alam\*, Rajib Ahsan, Abdul Karim Shaik, and Ida Lykke Fabricius, Technical U Denmark

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Stephanie Vialle\*, Tiziana Vanorio, and Gary Mavko, Stanford U

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Hamid Adesokan\* and Yuefeng Sun, Texas A&M

### **RP P1.8** (2703-2708)

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Arash JafarGandomi\* and Andrew Curtis, U Edinburgh

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Yangjun (Kevin) Liu\* and Gennady Goloshubin, U Houston; Dmitriy Silin, Lawrence Berkeley National Laboratory

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Na Shan\*, Robert H. Tatham, Mrinal K. Sen, Kyle Spikes, and Stephen C. Ruppel, U Texas at Austin

### **RP P2.5** (2730-2735)

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Beatriz Quintal\*, ETH Zurich; Stefan M. Schmalholz, U de Lausanne; Yuri Podladchikov, U Oslo

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Ida Lykke Fabricius\*, Technical U Denmark

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Mandy Wong\*, Biondo Biondi, and Shuki Ronen, Stanford U

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S. Scott Collis, Curtis C. Ober, and Bart G. van Bloemen Waanders, Sandia National Laboratories

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Niranjana Banik\*, Adam Koesoemadinata, and K. George El-Kaseh, WesternGeco

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Guozhong Gao\*, Aria Abubakar, and Tarek Habashy, Schlumberger-Doll Research

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Bjorn Heincke\*, Marion Jegen, Max Moorkamp, and Jin Chen, IFM-GEOMAR; Richard W. Hobbs, U Durham

### SI 2.5 (2810-2814)

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Alana Robinson\* and Thomas L. Davis, Colorado School of Mines

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Hongmei Cao\*, U Houston; Hua-wei Zhou, Texas Tech; Fred Hiltebrand, Geokinetics

### SI 2.7 (2820-2824)

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Youngseo Kim\* and Changsoo Shin, Seoul National U; Henri Calandra, TOTAL

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Bing Zhang\* and Jing-Huai Gao, Xi'an Jiao Tong U

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Alan W. Roberts\*, Richard W. Hobbs, and Michael Goldstein, U Durham; Max Moorkamp, Bjorn Heincke, and Marion Jegen, IFM-Geomar

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Amit Padhi\*, Pradip Mukhopadhyay, Tanya Blacic, Will Fortin, W. Steven Holbrook, and Subhashis Mallick, U Wyoming

### SI P1.5 (2850-2854)

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

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#### *Source estimation and direct wave reconstruction for the Laplace-domain waveform inversion of deepwater seismic data*

Nam-Hyung Koo\*, Korea Institute of Geoscience and Mineral Resources; Changsoo Shin and Dongkweon Lee, Seoul National U; Keun-Pil Park and Ho-Young Lee, Korea Institute of Geoscience and Mineral Resources

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A. Gisolf\* and P. M. van den Berg, Delft U Technology

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Nikhil K. Shah\*, Michael R. Warner, Lluis Guasch, Ivan Stekl, and Adrian P. Umpleby, Imperial College London



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Wang Lixin\*, Sinopec Geophysical Research Institute

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Manuel Queisser\* and Satish Singh, IPG

### **SI P2.3** (2880-2884)

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Yujuan Liu\*, Mingjin Zhao, Xingyan Fan, and Jianqi Li, LandOcean Energy Services; Shuiqing Hu, Research Institute of Petroleum Exploration and Development

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Mark C. H. Lam, Delft U Technology

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Shi-Chie Fuh\*, Chao-Hey Lai, Yu-Liang Yang, Tzy-Yi Chang, Jen-Yang Lin, and Chen-Ping Lee, Chinese Petroleum Corporation

### **SI P2.6** (2896-2900)

#### *A case study in the application of inversion methods to a Persian Gulf reservoir*

Amir Shamsa\* and Larry Lines, Chorus, U Calgary

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Jing Du\*, Songhui Lin, and Weiguo Sun, SINOPEC; Guochang Liu, China U Petroleum

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#### *Probabilistic neural network inversion for characterization of coalbed methane*

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Vadim Lisitsa\* and Egor Lys, Institute of Petroleum Geology and Geophysics of SB RAS; Dmitry Pissarenko, Schlumberger Moscow Research; Galina Reshetova, Institute of Computational Mathematics and Mathematical Geophysics of SB RAS; Vladimir Tcheverda, Institute of Petroleum Geology and Geophysics of SB RAS

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Henrik Bernth and Chris Chapman, Schlumberger Cambridge Research

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Yong Yun-dong\*, Wang Xi-wen, Wang Yu-chao, Hu Zi-Duo, and Wang En-Li, Petrochina

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Damir Pasalic and Ray McGarry, Acceleware

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#### *Finite-difference modeling with adaptive variable length spatial operators*

Yang Liu\*, State Key Lab of Petroleum Resource and Prospecting; Mrinal K. Sen, U Texas at Austin

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Zaiming Jiang\*, John C. Bancroft, and Laurence R. Lines, U Calgary

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Tariq Alkhalifah, King Abdullah U Science and Technology; Sergey Fomel, U Texas at Austin

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Lei Zhuo\* and Chu-Ong Ting, CCGVeritas

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James Hobro\*, Schlumberger Cambridge Research

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Junlun Li\*, Yang Zhang, and M. Nafi Toksöz, MIT

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Chunlei Chu\*, ConocoPhillips; Paul L. Stoffa, U Texas at Austin

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*Equivalent source distribution for efficient 3D acoustic wave-equation modeling in the Laplace domain*

Sukjoon Pyun\*, Inha U; Changsoo Shin, Seoul National U

### SM 2.7 (2982-2987)

*Elastic-wave propagation in variable media using a discontinuous Galerkin method*

Thomas M. Smith\*, S. Scott Collis, Curtis C. Ober, James R. Overfelt, and Hans F. Schwaiger, Sandia National Laboratory

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*Phase-shift time stepping for wavefield propagation*

Ben D. Wards, Gary F. Margrave, and Michael P. Lamoureux, U Calgary

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Xiao Ma and Dinghui Yang\*, Tsinghua U

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Zhengliang Cao\*, Hangzhou Applied Acoustic Research Institute and Norwegian U Science and Technology; Hefeng Dong, Norwegian U Science and Technology

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Geng-Xin Yu\* and Li-Yun Fu, Chinese Academy of Sciences

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HongYan Li, Jerry Kapoor, Nick Moldoveanu, Bill Dragoset, and Kun Jiao, WesternGeco

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Chris Chapman, James Hobro\*, and Johan Robertsson, Schlumberger Cambridge Research

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Pawel J. Matuszyk\*, Carlos Torres-Verdin, and Leszek F. Demkowicz, U Texas at Austin

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Tianrun Chen, Mike Fehler, Steve Brown, Yang Zhang, Xingding Fang, and Dan Burns, MIT; Ping Wang, CCGVeritas

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Anton Zaicenco\* and Iain Weir-Jones, Weir-Jones Engineering

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Issam Tarrass\*, Luc Goraid, Pierre Thore, and Francois Aye, Total E&P

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Dmitry Molodtsov\*, Saint-Petersburg State U; Yuri Roslov, Sevmorgeo

### SM P1.5 (3054-3059)

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Bastien Dupuy, U Joseph Fourier, CNRS; Louis De Barros, U College of Dublin; Stephane Garambois and Jean Virieux, U Joseph Fourier, CNRS

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Xin Wang, William W. Symes, and Tim Warburton, Rice U

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Ritesh K. Sharma\* and Robert J. Ferguson, U Calgary

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Roman Kazinnik and Vladimir Bashkardin, U Texas at Austin

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Olga Podgornova\*, Schlumberger Moscow Research; Vadim Lisitsa, Institute of Petroleum Geology and Geophysics SB RAS

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Lingyun Qiu\*, Maarten V. de Hoop, and Antonio Sa Barreto, Purdue U

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Zhiyong Jiang\* and Ray Abma, BP Exploration & Production Technology

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### W 6.5 (4418-4422)

*Anisotropy of fractured mica-rich schist from Outokumpu, Finland: VSP measurements, laboratory measurements, and theoretical model*  
Heather Schijns\* and Douglas R. Schmitt, U Alberta; Pekka Heikkinen, U Helsinki; Ilmo T. Kukkonen, Geological Survey of Finland

### W 6.6 (4423-4427)

*Integrating petrophysical data to build a 3D-earth model*  
Emmanuel L. Bongajum\*, Jun-wei Huang, and Bernd Milkereit, Physics Dept., U Toronto

## Predicting Geohazards Predrill using Geophysical Methods

**W 7.1** (664:/6653+

*Mitigating drilling hazards in the Forties Field using ocean bottom seismometers*

Klaas Koster and David Monk, Apache North Sea; Rafael Bouraly, Arne Rokkan, and Shuki Ronen, CGGVeritas

## Recent Advances in Elastic-wave Inversion for Shear-wave Interpretation

**W 10.1** (6654/6657+

*Prestack waveform inversion – the present state and the road ahead*

Subhashis Mallick\*, Pradip Kumar Mukhopadhyay, Admit Padhi, and Laramie Vladimir Alvarado, U Wyoming

**W 10.2** (6658/6663+

*Joint AVO inversion for time-lapse elastic reservoir properties: Hangingstone heavy oilfield, Alberta*

Ayato Kato\* and Robert R. Stewart, U Houston

**W 10.3** (6664/6669+

*3D PP-PS joint stratigraphic elastic inversion through combined AVA attributes*

Edward-Benedict Brodie of Brodie\*, Robert Garotta, and Pierre-Yves Granger, CGGVeritas

**W 10.4** (666:/6672+

*Elastic prestack waveform inversion: Case studies*

Anthony Vassiliou\*, GeoEnergy Inc.; August Lau, Chuan Yin, Mike Greenspon, Apache Corp; Mark Hilliard, ConocoPhillips

## Advances in Joint Inversion of (Multiset) and Multiphysics Data

**W 11.1** (6673/6675+

*Fracture diagnostics and reservoir monitoring using microseismicity and deformation-based measurements*

Jing Du\*, Norm Warpinski, and Kevin Fisher, Pinnacle – A Halliburton Service