



Tapan Mukerji

Professor (Research) of Energy Resources Engineering and, by courtesy, of Geophysics and of Geological Sciences

Bio

BIO

Tapan Mukerji co-directs the Stanford Center for Earth Resources Forecasting (SCERF), the Stanford Rocks and Geomaterials Project (SRGP), and the Stanford Basin Processes and Subsurface Modeling (BPSM) research groups.

The focus of Tapan's multi-disciplinary research, with students and colleagues, has been on integrating rock physics, wave propagation physics, spatial data science and machine learning, and their broad applications in remote sensing of subsurface systems and processes, stochastic geomodeling, uncertainty quantification and value of information in Earth sciences. He uses theoretical, computational, and statistical methods, to discover and understand fundamental relations between geophysical data and rock properties, to quantify uncertainty in subsurface models, and to address value of information for decision making under uncertainty. He has been an invited keynote speaker and lecturer for short courses on rock physics and geostatistics. He was awarded the Karcher Award in 2000 by the Society of Exploration Geophysicists. In 2014 Tapan (together with Gary Mavko, Jack Dvorkin and Dario Grana) was awarded the ENI award for pioneering innovations in theoretical and practical rock physics.

ACADEMIC APPOINTMENTS

- Professor (Research), Energy Resources Engineering
- Professor (Research) (By courtesy), Geophysics
- Professor (Research) (By courtesy), Geological Sciences

ADMINISTRATIVE APPOINTMENTS

- Professor (Research), Energy Resources Engineering, Stanford University, (2019- present)
- Co-director, Stanford Center for Earth Resources Forecasting (SCERF), Stanford University, (2008- present)
- Co-director, Basin Processes and Subsurface Modeling (BPSM), Stanford University, (2010- present)
- Co-director, Stanford Rocks and Geomaterials Project (SRGP), Stanford, (2022- present)
- Co-director, Stanford Rock Physics and Borehole Geophysics Project (SRB), Stanford University, (2019-2022)
- Associate Professor (Research), Energy Resources Engineering, Stanford University, (2017-2018)
- Associate Professor (Research), Energy Resources Engineering and Geophysics, Stanford University, (2013-2017)
- Associate Professor (Research), Energy Resources Engineering, Stanford University, (2008-2012)
- Senior Research Scientist, Stanford University, (2006-2008)
- Research Associate, Stanford University, (1999-2006)

HONORS AND AWARDS

- Finalist, Publication Competition Award, Decision Analysis Society, Institute for Operations Research and Management Science (INFORMS) (2017)
- Karcher Award for Outstanding Young Geophysicist, Society of Exploration Geophysicists (2000)
- ENI Award 2014: New frontiers of Hydrocarbons - upstream, ENI - Italy (2014)
- Best paper, honorable mention, Society of Exploration Geophysicists (2020)
- Invited Golden Jubilee Lecture, Dept. of Applied Geology, Dibrugarh University, India (2019)
- Invited Lecture, College of Mechanics and Materials, Hohai University, China (2019)
- Invited speaker, Institute of Pure and Applied Mathematics (IPAM) (2017)
- Invited speaker, International Union of Pure and Applied Physics (IUPAP), Conference on Computational Physics (2015)
- Best paper, International Association of Mathematical Geosciences (2010)
- Best paper, Society of Petroleum Geophysicists (SPG) International Conference, Hyderabad, India (2004)
- Best paper, honorable mention, Society of Exploration Geophysicists (1998)
- Invited keynote speaker, Brazilian Geophysical Society (SBGF) (2017)
- Invited keynote speaker, SEG Earth Model Forum, Rendering Rock Properties for Qualitative and Quantitative Interpretation (2015)
- Invited speaker, 3rd Petroleum Geostatistics Conference, EAGE, Biarritz (2015)
- Invited keynote speaker, SPWLA Topical Conference, Taos, New Mexico, Seismic Petrophysics: Unlocking the Value of Integration (2013)
- Invited keynote speaker, Society of Petroleum Geophysicists (SPG) International Conference, Hyderabad, India (2012)
- Invited speaker, Joint SEG/SPE/AAPG Summer Research Workshop, New Advances in Integrated Reservoir Surveillance (2012)
- Invited Speaker, Recent Advances and Road Ahead, Society of Exploration Geophysicists Annual International Meeting (2011)
- Haider Fellowship, Stanford University (1997)
- Green Fellowship, Stanford University (1989-1990)
- CSIR Fellowship, Council of Scientific and Industrial Research, India (1989)
- University First (M.S.), Banaras Hindu University, India (1989)
- University First (B.S.), Banaras Hindu University, India (1986)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Departmental admissions committee, Stanford University (2012 - present)
- Member, AGU, SEG, EAGE (1990 - present)
- Associate Editor, Geophysics, Society of Exploration Geophysicists (2001 - present)
- Associate Editor, Computers & Geosciences, International Association of Mathematical Geosciences (2011 - present)
- Dissertation reading committees; dissertation defense chair, Stanford University (2002 - present)
- Technical organizing committee, SBGF workshop on uncertainty quantification in reservoir characterization (2017 - 2017)
- Technical organizing committee, SPE Workshop on Integration of 4D Seismic and Production Data for Reservoir Management - Application to Norne (Norway) (2013 - 2013)
- Technical organizing committee, Joint SPE/AAPG/SEG Applied Technology Workshop on Quantitative Interpretation (2010 - 2010)
- Reviewer, Department of Energy, Office of Basic Energy Sciences (2013 - 2013)
- Lecturer, Mathematical Geophysics Summer School, Department of Mathematics, Stanford University (2001 - 2001)
- Departmental admissions committee, Stanford University (2010 - 2010)
- Invited lecturer, Houston Geophysical Society (2008 - 2008)
- Peer review committee, Department of Energy, Stanford University (2003 - 2003)

- Co-chair, technical committee, 11th Venezuelan Geophysical Conference (2002 - 2002)
- Reviewer, Professional journals (1990 - present)

PROFESSIONAL EDUCATION

- Ph.D., Stanford University, U.S.A. , Geophysics (1995)
- M.Sc.(Tech), Banaras Hindu University, India , Geophysics (1989)
- B.Sc., Banaras Hindu University, India , Physics (1986)

LINKS

- Mukerji Research: <https://earth.stanford.edu/ere/about/energy-resources-engineering-faculty#gs.w8x7f7>
- SCERF: <http://scerf.stanford.edu>
- SRB: <http://srb.stanford.edu>
- BPSM: <http://bpsm.stanford.edu>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Research

The focus of my research, with students and colleagues, has been on integrating rock physics, wave propagation physics, data sciences and machine learning, and their broad applications in remote sensing of subsurface systems and processes and subsurface uncertainty quantification. Over the years, I have been involved in the research activities of different industrial consortia - Stanford Rock Physics and Borehole Geophysics (SRB), Stanford Center for Earth Resources Forecasting (SCERF), Basin Processes and Subsurface Modeling (BPSM), Stanford Rocks and Geomaterials Project (SRGP) and Smart Fields Consortium (SFC). My research uses theoretical, computational, and statistical models, to discover and understand fundamental relations between geophysical data and reservoir properties, to quantify uncertainty in our models, and to address value of information for decision making under uncertainty. I am particularly interested in forging links between research disciplines in geosciences, engineering, and decision sciences. I believe such research links across traditional boundaries are critical for the future of energy resources research.

Teaching

My courses for advanced undergraduates and graduates introduce students to mathematical methods for modeling, data analysis, and simulation using modern high-level software. The students come not only from the School of Earth Sciences but also from engineering, and biology. I continue to co-teach graduate level courses on rock physics and practice of geostatistics and seismic data integration. With my co-authors, I have written *The Rock Physics Handbook*, *Quantitative Seismic Interpretation*, *Seismic Reservoir Modeling*, *Quantitative Analysis of Geopressure*, and *Value of Information in the Earth Sciences*. These books are valuable resources for students, and researchers, and have been used as course material for university and industry courses. I enjoy advising and mentoring graduate students in their research work. Of course, one of the special rewards of teaching students is that I often learn as much from them as they do from me!

Professional Activities

Co-director SCERF, SRGP, BPSM; associate editor, *Computers and Geosciences* (2011-present), associate editor, *Geophysics*, (2001-present); invited instructor, *Mathematical Geophysics Summer School*, Stanford, (2001); co-chair, technical committee, 11th Venezuelan Geophysical Congress, (2002); proposal review, Department of Energy and American Chemical Society (2003-present); manuscript review for professional journals; member, AAAS, AGU, SEG, EAGE, SPE.

Teaching

COURSES

2021-22

- ERE Master's Graduate Seminar: ENERGY 351 (Aut)
- ERE PhD Graduate Seminar: ENERGY 352 (Aut)
- Exploring Geosciences with MATLAB: ENERGY 112, GEOPHYS 112 (Aut)
- Seismic Reservoir Characterization: ENERGY 141, ENERGY 241 (Spr)

2020-21

- Exploring Geosciences with MATLAB: ENERGY 112, GEOPHYS 112 (Aut)
- Fluids and Flow in the Earth: Computational Methods: GEOPHYS 181 (Win)
- Rock Physics: ENERGY 252, GEOPHYS 262 (Aut)

2019-20

- ERE Master's Graduate Seminar: ENERGY 351 (Win)
- ERE PhD Graduate Seminar: ENERGY 352 (Win)
- Exploring Geosciences with MATLAB: ENERGY 112, GEOPHYS 112 (Aut)
- Seismic Reservoir Characterization: ENERGY 141, ENERGY 241, GEOPHYS 241A (Spr)

2018-19

- Exploring Geosciences with MATLAB: ENERGY 112, GEOPHYS 112 (Aut)
- Fluids and Flow in the Earth: Computational Methods: GEOPHYS 181, GEOPHYS 203 (Win)
- Quantitative Dynamic Stratigraphy: GEOLSCI 214 (Aut)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Dimitrios Ioannis Belivanis, Tyler Hall, FILIPPOS KOSTAKIS, Dante Orta Alemán, Pulkit Singh, Lijing Wang

Postdoctoral Faculty Sponsor

Mingliang Liu, Suihong Song

Doctoral Dissertation Advisor (AC)

Alexander Bakay, Jaehong Chung, Josue Fonseca

Master's Program Advisor

Haidar Al Qatari

Doctoral Dissertation Co-Advisor (AC)

Anatoly Aseev

Doctoral (Program)

Jiayuan Huang, Rayan Kanfar, Yashee Mathur, Wenchao Teng, Divakar Vashisth

Publications

PUBLICATIONS

- **Quantitative Analysis of Geopressure for Geoscientists and Engineers**

Dutta, N. C., Bachrach, R., Mukerji, T.

Cambridge University Press.2021

- **Seismic Reservoir Modeling: Theory, Examples, and Algorithms**

Grana, D., Mukerji, T., Doyen, P.

Wiley-Blackwell.2021

- **The Rock Physics Handbook, 3rd Ed.**

Mavko, G., Mukerji, T., Dvorkin, J.

Cambridge University Press.2020

- **Value of Information in the Earth Sciences: Integrating Spatial Modeling and Decision Analysis**

Eidsvik, J., Mukerji, T., Bhattacharjya, D.

Cambridge University Press.2015

- **Quantitative Seismic Interpretation**

Avseth, P., Mukerji, T., Mavko, G.

Cambridge University Press.2005

- **Brown and Korringa's expression for the saturated bulk modulus at high frequencies: Modification of Mavko and Jizba's squirt flow model** *GEOPHYSICS*

Zhao, L., Chen, T., Mukerji, T., Zhang, M., Xing, T.

2022; 87 (4): MR201-MR208

- **Randomized Tensor Decomposition for Large-Scale Data Assimilation Problems for Carbon Dioxide Sequestration** *MATHEMATICAL GEOSCIENCES*

Liu, M., Grana, D., Mukerji, T.

2022

- **Quantitative evaluation of the roles of ocean chemistry and climate on ooid size across the Phanerozoic: Global versus local controls** *SEDIMENTOLOGY*

Koeshidayatullah, A., Trower, E. J., Li, X., Mukerji, T., Lehrmann, D. J., Morsilli, M., Al-Ramadan, K., Payne, J. L.

2022

- **Multiscale Fusion of Digital Rock Images Based on Deep Generative Adversarial Networks** *GEOPHYSICAL RESEARCH LETTERS*

Liu, M., Mukerji, T.

2022; 49 (9)

- **Consistency and prior falsification of training data in seismic deep learning: Application to offshore deltaic reservoir characterization** *GEOPHYSICS*

Pradhan, A., Mukerji, T.

2022; 87 (3): N45-N61

- **Application of Bayesian Generative Adversarial Networks to Geological Facies Modeling** *MATHEMATICAL GEOSCIENCES*

Feng, R., Grana, D., Mukerji, T., Mosegaard, K.

2022

- **Shape Carving Methods of Geologic Body Interpretation from Seismic Data Based on Deep Learning** *ENERGIES*

Petrov, S., Mukerji, T., Zhang, X., Yan, X.

2022; 15 (3)

- **Duration and Intensity of End-Permian Marine Anoxia** *GEOCHEMISTRY GEOPHYSICS GEOSYSTEMS*

Pimentel-Galvan, M., Lau, K. V., Maher, K., Mukerji, T., Lehrmann, D. J., Altiner, D., Payne, J. L.

2022; 23 (1)

- **GANSim-3D for Conditional Geomodeling: Theory and Field Application** *Water Resources Research*

Song, S., Mukerji, T., Hou, J., Zhang, D., Lyu, X.

2022

- **Bridging the Gap Between Geophysics and Geology With Generative Adversarial Networks** *IEEE TRANSACTIONS ON GEOSCIENCE AND REMOTE SENSING*
Song, S., Mukerji, T., Hou, J.
2022; 60
- **Stochastic inversion of gravity, magnetic, tracer, lithology, and fault data for geologically realistic structural models: Patua Geothermal Field case study** *GEOTHERMICS*
Pollack, A., Cladouhos, T. T., Swyer, M. W., Siler, D., Mukerji, T., Horne, R. N.
2021; 95
- **Point-cloud deep learning of porous media for permeability prediction** *PHYSICS OF FLUIDS*
Kashefi, A., Mukerji, T.
2021; 33 (9)
- **Fast inversion of gravimetric profiles via a modified version of the Pereyra-Rosen algorithm** *JOURNAL OF EARTH SYSTEM SCIENCE*
Fernandez-Muniz, M., Pallero, J. G., Mukerji, T., Fernandez-Martinez, J. L.
2021; 130 (3)
- **A Comparative Experiment on Heterogeneous Distributions of Stress Field for Underground Panels With Different Geological Setting in North China** *IEEE TRANSACTIONS ON GEOSCIENCE AND REMOTE SENSING*
Chen, T., Lin, Z., Liu, Z., Mukerji, T.
2021
- **Bulk modulus for fluid-saturated rocks at high frequency: modification of squirt flow model proposed by Mavko & Jizba** *GEOPHYSICAL JOURNAL INTERNATIONAL*
Zhao, L., Chen, T., Mukerji, T., Tang, G.
2021; 225 (3): 1714-1724
- **Simulation of Fluvial Patterns With GANs Trained on a Data Set of Satellite Imagery** *WATER RESOURCES RESEARCH*
Nesvold, E., Mukerji, T.
2021; 57 (5)
- **Geological Facies modeling based on progressive growing of generative adversarial networks (GANs)** *COMPUTATIONAL GEOSCIENCES*
Song, S., Mukerji, T., Hou, J.
2021
- **GANSim: Conditional Facies Simulation Using an Improved Progressive Growing of Generative Adversarial Networks (GANs)** *MATHEMATICAL GEOSCIENCES*
Song, S., Mukerji, T., Hou, J.
2021
- **Analysis of Spatially Distributed Fracture Attributes: Normalized Lacunarity Ratio** *JOURNAL OF GEOPHYSICAL RESEARCH-SOLID EARTH*
Roy, A., Perfect, E., Mukerji, T.
2021; 126 (2)
- **Probabilistic Evaluation of Geoscientific Hypotheses with Geophysical Data: Application to Electrical Resistivity Imaging of a Fractured Bedrock Zone** *Journal of Geophysical Research: Solid Earth*
Miltenberger, A., Uhlemann, S., Mukerji, T., Dafflon, B., Williams, K., Wang, L., Wainwright, H.
2021; 126
- **Bayesian Optimized Monte Carlo Planning**
Mern, J., Yildiz, A., Sunberg, Z., Mukerji, T., Kochenderfer, M. J., Assoc Advancement Artificial Intelligence
ASSOC ADVANCEMENT ARTIFICIAL INTELLIGENCE.2021: 11880-11887
- **Improved POMDP Tree Search Planning with Prioritized Action Branching**
Mern, J., Yildiz, A., Bush, L., Mukerji, T., Kochenderfer, M. J., Assoc Advancement Artificial Intelligence
ASSOC ADVANCEMENT ARTIFICIAL INTELLIGENCE.2021: 11888-11894
- **A Graph-Theoretic Monte Carlo Framework for Comparing Delta Surface Dynamics and Subsurface Structure in Numerical Models and Physical Experiments** *Mathematical Geosciences*
Miltenberger, A., Mukerji, T., Hariharan, J., Passalacqua, P., Nesvold, E.

2021; 53 (6)

- **Petrophysical properties prediction from prestack seismic data using convolutional neural networks** *GEOPHYSICS*
Das, V., Mukerji, T.
2020; 85 (5): N41–N55
- **Approximate Bayesian inference of seismic velocity and pore-pressure uncertainty with basin modeling, rock physics, and imaging constraints** *GEOPHYSICS*
Pradhan, A., Dutta, N. C., Le, H. Q., Biondi, B., Mukerji, T.
2020; 85 (5): ID19–ID34
- **Lithofacies-dependent rock-physics templates of an unconventional shale reservoir on the North Slope, Alaska** *INTERPRETATION-A JOURNAL OF SUBSURFACE CHARACTERIZATION*
Minh Tran, Mukerji, T., Scheirer, A.
2020; 8 (3): T611–T623
- **Seismic Bayesian evidential learning: estimation and uncertainty quantification of sub-resolution reservoir properties** *COMPUTATIONAL GEOSCIENCES*
Pradhan, A., Mukerji, T.
2020; 24 (3): 1121–40
- **Introduction to special section: Rock properties from AVA/AVO analysis** *INTERPRETATION-A JOURNAL OF SUBSURFACE CHARACTERIZATION*
Zhang, Z., Bao, C., Cardona, R., Castagna, J., Dygert, T., Mukerji, T., Gelinsky, S., Russell, B., Sun, Y., Zhang, S.
2020; 8 (1)
- **A spatial-statistical investigation of surface expressions associated with cyclic steaming in the Midway-Sunset Oil Field, California** *GEOMECHANICS AND GEOPHYSICS FOR GEO-ENERGY AND GEO-RESOURCES*
Pollack, A., Mukerji, T., Fu, P., Nelson, D., Bartling, B., Toland, M., Lopez, A., Guice, R.
2020; 6 (1)
- **Accounting for subsurface uncertainty in enhanced geothermal systems to make more robust techno-economic decisions** *APPLIED ENERGY*
Pollack, A., Mukerji, T.
2019; 254
- **Compact models for adaptive sampling in marine robotics** *INTERNATIONAL JOURNAL OF ROBOTICS RESEARCH*
Fossum, T., Ryan, J., Mukerji, T., Eidsvik, J., Maughan, T., Ludvigsen, M., Rajan, K.
2019
- **Convolutional neural network for seismic impedance inversion** *GEOPHYSICS*
Das, V., Pollack, A., Wollner, U., Mukerji, T.
2019; 84 (6): R869–R880
- **Value of information analysis for subsurface energy resources applications** *APPLIED ENERGY*
Dutta, G., Mukerji, T., Eidsvik, J.
2019; 252
- **Value of information of time-lapse seismic data by simulation-regression: comparison with double-loop Monte Carlo** *COMPUTATIONAL GEOSCIENCES*
Dutta, G., Mukerji, T., Eidsvik, J.
2019; 23 (5): 1049–64
- **Static and dynamic effective moduli of elastic-perfectly plastic granular aggregates under normal compression** *GEOPHYSICS*
Kerimov, A., Mavko, G., Mukerji, T., Dvorkin, J.
2019; 84 (5): MR185–MR194
- **Prestack and poststack inversion using a physics-guided convolutional neural network** *INTERPRETATION-A JOURNAL OF SUBSURFACE CHARACTERIZATION*
Biswas, R., Sen, M. K., Das, V., Mukerji, T.
2019; 7 (3): SE161–SE174
- **Numerical simulation of coupled fluid-solid interaction at the pore scale: A digital rock-physics technology** *GEOPHYSICS*
Das, V., Mukerji, T., Mavko, G.
2019; 84 (4): WA71–WA81

- **Particula: A simulator tool for computational rock physics of granular media** *GEOPHYSICS*
Al Ibrahim, M. A., Kerimov, A., Mukerji, T., Mavko, G.
2019; 84 (3): F85–F95
- **Scale effects of velocity dispersion and attenuation (Q(-1)) in layered viscoelastic medium** *GEOPHYSICS*
Das, V., Mukerji, T., Mavko, G.
2019; 84 (3): T147–T166
- **Correlating geologic and seismic data with unconventional resource production curves using machine learning** *GEOPHYSICS*
Smith, R., Mukerji, T., Lupo, T.
2019; 84 (2): O39–O47
- **What Earth Properties and Engineering Decisions Most Influence the Productivity of an Enhanced Geothermal System?**
Pollack, A., Mukerji, T., Yan, J., Yang, H. X., Li, H., Chen
ELSEVIER SCIENCE BV.2019: 6024–29
- **The Influence of Convex Particles' Irregular Shape and Varying Size on Porosity, Permeability, and Elastic Bulk Modulus of Granular Porous Media: Insights From Numerical Simulations** *JOURNAL OF GEOPHYSICAL RESEARCH-SOLID EARTH*
Kerimov, A., Mavko, G., Mukerji, T., Dvorkin, J., Al Ibrahim, M. A.
2018; 123 (12): 10563–82
- **Integrating statistical rock physics and pressure and thermal history modeling to map reservoir lithofacies in the deepwater Gulf of Mexico** *GEOPHYSICS*
Alkawai, W. H., Mukerji, T., Scheirer, A., Graham, S. A.
2018; 83 (4): IM15–IM28
- **Combining seismic reservoir characterization workflows with basin modeling in the deepwater Gulf of Mexico Mississippi Canyon area**
AlKawai, W. H., Mukerji, T., Scheirer, A., Graham, S. A.
AMER ASSOC PETROLEUM GEOLOGIST.2018: 629–52
- **Mechanical trapping of particles in granular media** *PHYSICAL REVIEW E*
Kerimov, A., Mavko, G., Mukerji, T., Al Ibrahim, M. A.
2018; 97 (2): 022907
- **Integrating basin modeling with seismic technology and rock physics** *GEOPHYSICAL PROSPECTING*
Al Kawai, W., Mukerji, T.
2016; 64 (6): 1556-1574
- **On microscale heterogeneity in granular media and its impact on elastic property estimation** *GEOPHYSICS*
Sain, R., Mukerji, T., Mavko, G.
2016; 81 (6): D561-D571
- **The influence of resolution on scale-dependent clustering in fracture spacing data** *INTERPRETATION-A JOURNAL OF SUBSURFACE CHARACTERIZATION*
Roy, A., Aydin, A., Mukerji, T.
2016; 4 (3): T387-T394
- **Regularized sparse-grid geometric sampling for uncertainty analysis in non-linear inverse problems** *GEOPHYSICAL PROSPECTING*
Azevedo, L., Tompkins, M. J., Mukerji, T.
2016; 64 (2): 320-334
- **Geological realism in hydrogeological and geophysical inverse modeling: A review** *ADVANCES IN WATER RESOURCES*
Linde, N., Renard, P., Mukerji, T., Caers, J.
2015; 86: 86-101
- **Probabilistic falsification of prior geologic uncertainty with seismic amplitude data: Application to a turbidite reservoir case** *GEOPHYSICS*
Scheidt, C., Jeong, C., Mukerji, T., Caers, J.
2015; 80 (5): M89-M100
- **In situ identification of high vertical stress areas in an underground coal mine panel using seismic refraction tomography** *INTERNATIONAL JOURNAL OF COAL GEOLOGY*

-
- Chen, T., Wang, X., Mukerji, T.
2015; 149: 55-66
- **Bayesian inversion of time-lapse seismic data for the estimation of static reservoir properties and dynamic property changes** *GEOPHYSICAL PROSPECTING*
Grana, D., Mukerji, T.
2015; 63 (3): 637-655
 - **Fluid substitution in multimineralic rocks with large mineral stiffness contrast** *GEOPHYSICS*
Saxena, N., Mavko, G., Mukerji, T.
2015; 80 (3): L11-L33
 - **Comparative analysis of the solution of linear continuous inverse problems using different basis expansions** *JOURNAL OF APPLIED GEOPHYSICS*
Fernandez-Muniz, Z., Fernandez-Martinez, J. L., Srinivasan, S., Mukerji, T.
2015; 113: 92-102
 - **Permeability characterization of natural compaction bands using core flooding experiments and three-dimensional image-based analysis: Comparing and contrasting the results from two different methods** *AAPG BULLETIN*
Deng, S., Zuo, L., Aydin, A., Dvorkin, J., Mukerji, T.
2015; 99 (1): 27-49
 - **Value of information analysis and Bayesian inversion for closed skew-normal distributions: Applications to seismic amplitude variation with offset data** *GEOPHYSICS*
Rezaie, J., Eidsvik, J., Mukerji, T.
2014; 79 (4): R151-R163
 - **How computational rock-physics tools can be used to simulate geologic processes, understand pore-scale heterogeneity, and refine theoretical models** *The Leading Edge*
Sain, R., Mukerji, T., Mavko, G.
2014; 33: 324-334
 - **Sensitivity study of rock-physics parameters for modeling time-lapse seismic response of Norne field** *GEOPHYSICS*
Suman, A., Mukerji, T.
2013; 78 (6): D511-D523
 - **Building Bayesian networks from basin-modelling scenarios for improved geological decision making** *PETROLEUM GEOSCIENCE*
Martinelli, G., Eidsvik, J., Sinding-Larsen, R., Rekstad, S., Mukerji, T.
2013; 19 (3): 289-304
 - **Change in effective bulk modulus upon fluid or solid substitution** *GEOPHYSICS*
Saxena, N., Mavko, G., Mukerji, T.
2013; 78 (4): L45-L56
 - **A methodology for quantifying the value of spatial information for dynamic Earth problems** *STOCHASTIC ENVIRONMENTAL RESEARCH AND RISK ASSESSMENT*
Trainor-Guitton, W. J., Mukerji, T., Knight, R.
2013; 27 (4): 969-983
 - **Estimating Brown-Korringa constants for fluid substitution in multimineralic rocks** *GEOPHYSICS*
Mavko, G., Mukerji, T.
2013; 78 (3): L27-L35
 - **Statistical integration of time-lapse seismic and electromagnetic data with a PDF upscaling method using multi-point geostatistics** *SEG*
Lee, J., Mukerji, T., Tompkins, M.
SEG Exp. Abstr..2013
 - **Sensitivity analysis and cascaded interpretation scheme for subtle seismic signatures in thin shaly-sand reservoirs** *SEG*
Dejtrakulwong, P., Mavko, G., Mukerji, T.
SEG Exp. Abstr..2013
 - **Joint estimation of rock properties and dynamic property changes from time-lapse seismic data** *SEG*

- Grana, D., Mukerji, T.
SEG Exp. Abstr..2013
- **Digital rock physics benchmarks-Part I: Imaging and segmentation** *COMPUTERS & GEOSCIENCES*
Andrae, H., Combaret, N., Dvorkin, J., Glatt, E., Han, J., Kabel, M., Keehm, Y., Krzikalla, F., Lee, M., Madonna, C., Marsh, M., Mukerji, T., Saenger, et al
2013; 50: 25-32
 - **Evaluating stress concentration zones in a coal mine by refraction tomography: An in situ example from East China** *SEG Ann. Mtg.*
Chen, T., Wang, X., Mukerji, T.
SEG Exp. Abstr.2013
 - **Digital rock physics benchmarks-part II: Computing effective properties** *COMPUTERS & GEOSCIENCES*
Andrae, H., Combaret, N., Dvorkin, J., Glatt, E., Han, J., Kabel, M., Keehm, Y., Krzikalla, F., Lee, M., Madonna, C., Marsh, M., Mukerji, T., Saenger, et al
2013; 50: 33-43
 - **How to design a powerful family of particle swarm optimizers for inverse modelling** *TRANSACTIONS OF THE INSTITUTE OF MEASUREMENT AND CONTROL*
Fernandez Martinez, J. L., Garcia Gonzalo, E., Fernandez Muniz, Z., Mukerji, T.
2012; 34 (6): 705-719
 - **Stochastic inversion of facies from seismic data based on sequential simulations and probability perturbation method** *GEOPHYSICS*
Grana, D., Mukerji, T., Dvorkin, J., Mavko, G.
2012; 77 (4): M53-M72
 - **Quantitative log interpretation and uncertainty propagation of petrophysical properties and facies classification from rock-physics modeling and formation evaluation analysis** *GEOPHYSICS*
Grana, D., Pirrone, M., Mukerji, T.
2012; 77 (3): WA45-WA63
 - **Multiphysics borehole geophysical measurements, formation evaluation, petrophysics, and rock physics - Introduction** *GEOPHYSICS*
Torres-Verdin, C., Revil, A., Oristaglio, M., Mukerji, T.
2012; 77 (3): WA1-WA2
 - **Exact and Approximate Solid Substitution Transforms** *SEG Annual Meeting*
Saxena, N., Mavko, G., Mukerji, T.
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