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Gerald Mavko

Professor (Research) of Geophysics



Contact Information

Email: mavko@stanford.edu
 Phone: (650) 723-9438
 Fax: (650) 723-1188
 Office: MITCHELL 313, 397
 Lomax Hall, Stanford,
 California 94305-2215

Internet Links:

[Stanford Rock Physics & Borehole Geophysics Project](#)

Document Links:

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Professor (Research), Geophysics

Administrative Appointments

Professor (Research) of Geophysics, Stanford University (1998 - Present)
Associate Professor (Research) of Geophysics, Stanford University (1993 - 1998)
Acting Associate Professor of Geophysics, Stanford University (1989 - 1993)
Vice President of Research and Development; Senior Research Geophysicist, Entropic Geophysical, Cupertino (1984 - 1989)
Geophysicist/Project Chief, U.S. Geological Survey, Menlo Park (1978 - 1984)
Postdoctoral Fellow/Lecturer Geophysics, Stanford University (1977 - 1978)
Project Officer/Physicist, U.S. Air Force (1974 - 1976)

Honors and Awards

Frontiers of Hydrocarbons Medal, ENI (2014)
Distinguished Lecturer, Soc. of Exploration Geophysicists (2006 - present)
Honorary Membership Award, Society of Exploration Geophysicists. (2001)
School of Earth Sciences Excellence in Teaching Award, Stanford University (2000)
Nominated for the Reginald Fessenden Award of the Society of Exploration Geophysicists, Society of Exploration Geophysicists (2000)
Honorable Mention for the best paper, Geophysics (1998)
Outstanding Contribution SEG 65th Annual Meeting, SEG (1996)
Honorable Mention for SEG Best Poster Award, SEG (1991)
National Research Council Research Associate-ship, U.S. Geological Survey (1978)
National Science Foundation Postdoctoral Fellowship, NSF (1977)
First in class, Engineering Physics, Cornell University (1972)
National Science Foundation Graduate Fellowship, NSF (1972)
Tau Beta Pi, Phi Kappa Phi honorary fraternities (1971)

University Service and Professional Activities

Director of Graduate Studies, Geophysics, Stanford University (2014 - Present)
Admissions Chair, Geophysics, Stanford University (2011 - Present)
Member, American Assoc. Petroleum Geologists (2005 - Present)
Member, International Advisory Board, University of Bergen, Norway (2004 - Present)
Freshman/Sophomore advisor, Stanford University (1997 - Present)
Instructor, SEG Continuing Education Program (1996 - Present)
Member, Member, Society of Petroleum Engineers (1994 - Present)
Member, European Association of Geoscientists and Engineers (1991 - Present)
Co-Director, Stanford Rock Physics and Borehole Geophysics Project, Stanford University (1990 - Present)
Member, Member, American Geophysical Union, Society of Exploration Geophysics (1972 - Present)
Associate Chair, Geophysics, Stanford University (2006 - 2008)
Building Space Coordinator, Earth Sciences, Stanford University (2005 - 2005)
University Research Administration Steering Committee, Stanford University (2002 - 2005)
Invited Instructor, BP, Shell, Norsk Hydro (2000 - 2001)
Invited Instructor, Royal-Dutch Shell, Schlumberger (1999 - 1999)
DOE Review Panel, DOE (1998 - 1999)
Committee on Research, Stanford University (1997 - 2001)

Education

Ph.D, Stanford University, Geophysics (1977)
M.S., Stanford University, Geophysics (1974)

Research & Scholarship

Current Research and Scholarly Interests

Research

work to discover and understand the relationship between geophysical measurements and the rock and fluid properties that they sample in the Earth. My students and I have begun to understand the impact of rock type, porosity, pore fluids, temperature, and stress on seismic wave propagation and electromagnetic response. We are also working to quantify the links between geophysical measurements and the sedimentary and diagenetic processes that determine rock mineralogy and texture. Ultimately, this work allows us to better infer, from geophysical images, the composition and physical conditions at depth.

Teaching

teach courses for graduate and undergraduate students on rock physics--the study of the physical properties of rocks and how they can be detected and mapped using seismic and electrical methods. This includes theory, laboratory measurements, and field data analysis. I also lead seminars in which students present and critique their ongoing research in rock physics.

Professional Activities

associate chair, Department of Geophysics (2006-2008); distinguished lecturer, Society of Exploration Geophysicists (2006); honorary membership, Society of Exploration Geophysicists (2001); nominated for Reginald Fessenden Award, Society of Exploration Geophysicists (2000); School of Earth Sciences Excellence in Teaching Award (2000)

Teaching

Courses Taught

2014-15

Poroelasticity

GEOPHYS 385V (Aut, Win, Spr, Sum)

Rock Physics

GEOPHYS 262 (Aut)

Independent Study Courses

Directed Reading

GEOPHYS 100 (Win, Spr) GEOPHYS 100 (Win, Spr)

Honors Program

GEOPHYS 198 (Aut, Win, Spr) GEOPHYS 198 (Aut, Win, Spr)

Report on Energy Industry Training

GEOPHYS 255 (Sum) GEOPHYS 255 (Sum)

Research in Geophysics

GEOPHYS 400 (Aut, Win, Spr, Sum) GEOPHYS 400 (Aut, Win, Spr, Sum)

Undergraduate Research in Geophysics

GEOPHYS 196 (Aut) GEOPHYS 196 (Aut)

2013-14

Poroelasticity

GEOPHYS 385V (Aut, Win, Spr, Sum)

Rock Physics

GEOPHYS 262 (Aut)

Independent Study Courses

Directed Reading

GEOPHYS 100 (Win, Spr) GEOPHYS 100 (Win, Spr)

Honors Program

[GEOPHYS 198 \(Aut, Win, Spr\) GEOPHYS 198 \(Aut, Win, Spr\)](#)

[Report on Energy Industry Training](#)

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[Undergraduate Research in Geophysics](#)

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[GEOPHYS 255 \(Sum\) GEOPHYS 255 \(Sum\)](#)

[Research in Geophysics](#)

[GEOPHYS 400 \(Aut, Win, Spr, Sum\) GEOPHYS 400 \(Aut, Win, Spr, Sum\)](#)

[Undergraduate Research in Geophysics](#)

[GEOPHYS 196 \(Aut\) GEOPHYS 196 \(Aut\)](#)

ublications

ublications

Implications of pore microgeometry heterogeneity for the movement and chemical reactivity of

CO₂ in carbonates *GEOPHYSICS* Vialle, S., Dvorkin, J., Mavko, G. 2013; 78 (5): L69-L86

Change in effective bulk modulus upon fluid or solid substitution *GEOPHYSICS* Saxena, N.,

Mavko, G., Mukerji, T. 2013; 78 (4): L45-L56

Relaxation shift in rocks containing viscoelastic pore fluids *GEOPHYSICS* Mavko, G. 2013; 78

(3): M19-M28

Estimating Brown-Korrington constants for fluid substitution in multimineralic rocks *GEOPHYSICS*

Mavko, G., Mukerji, T. 2013; 78 (3): L27-L35

Inverse rock physics modeling for reservoir quality prediction *GEOPHYSICS* Johansen, T. A.,

Jensen, E. H., Mavko, G., Dvorkin, J. 2013; 78 (2): M1-M18

The effect of adsorption and Knudsen diffusion on the steady-state permeability of microporous

rocks *GEOPHYSICS* Allan, A. M., Mavko, G. 2013; 78 (2): D75-D83

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

Laboratory measurements of the acoustic and transport properties of carbonate rocks and their

link with the amount of microcrystalline matrix *GEOPHYSICS* Vanorio, T., Mavko, G. 2011; 76 (4): E105-E115

V-P/V-S ratio and shear-wave splitting in the Nankai Trough seismogenic zone: Insights into effective stress, pore pressure, and sediment consolidation *GEOPHYSICS* Tsuji, T., Dvorkin, J., Mavko, G., Nakata, N., Matsuoka, T., Nakanishi, A., Kodaira, S., Nishizawa, O. 2011; 76 (3): WA71-WA82

Modeling of elasticity effects of sandstone compaction using coated inclusions *GEOPHYSICS* Agersborg, R., Johansen, T. A., Mavko, G., Vanorio, T. 2011; 76 (3): E69-E79

Dynamic elastic properties of coal *GEOPHYSICS* Morcote, A., Mavko, G., Prasad, M. 2010; 75 (6): E227-E234

Rock-physics diagnostics of depositional texture, diagenetic alterations, and reservoir heterogeneity in high-porosity siliciclastic sediments and rocks - A review of selected models and suggested work flows *GEOPHYSICS* Avseth, P., Mukerji, T., Mavko, G., Dvorkin, J. 2010; 75 (5): A31-A47

Improved granular medium model for unconsolidated sands using coordination number, porosity, and pressure relations *GEOPHYSICS* Dutta, T., Mavko, G., Mukerji, T. 2010; 75 (2): E91-E99

The influence of pore fluids and frequency on apparent effective stress behavior of seismic velocities *GEOPHYSICS* Mavko, G., Vanorio, T. 2010; 75 (1): N1-N7

The rock physics basis for 4D seismic monitoring of CO₂ fate: Are we there yet? *The Leading Edge* Vanorio, T., Mavko, G., Vialle, S., Spratt, K. 2010; 29

Approximate fluid substitution for vertical velocities in weakly anisotropic VTI rocks *GEOPHYSICS* Mavko, G., Bandyopadhyay, K. 2009; 74 (1): D1-D6

Confocal laser scanning and atomic-force microscopy in estimation of elastic properties of the organic-rich Bazhenov Formation *The Leading Edge* Ahmadov, R., Vanorio, T., Mavko, G. 2009; 28

Effective medium modeling of laboratory velocity and resistivity data on carbonates from the Apulia Platform, Italy *SEG Expanded Abstracts* Gomez, C., Scotellaro, C., Vanorio, T., Dvorkin, G., Mavko, G. 2009; 28

Investigating Thomas-Stieber model for property estimation of thin-bedded shaly-sand reservoirs *SEG Expanded Abstracts* Dejtrakulwong, P., T., Mukerji, Mavko, G. 2009; 28

Effect of diagenesis on elastic and transport properties using computational rock physics in realistic pore microstructure *SEG Expanded Abstracts* Sain, R., Mavko, G., and Mukerji 2009; 28

Attenuation and attenuation anisotropy in laminated rocks *SEG Expanded Abstracts* Bandyopadhyay, K., Dvorkin, J., Mavko, G. 2009; 28: 2065

Rock physics estimation of cement volume, sorting, and net-to-gross in North Sea sandstones *The Leading Edge* Avseth, P., Jorstad, A., A-J., Winjgaarden, Mavko, G. 2009; 28

Compaction trends for shale and clean sandstone in shallow sediments, Gulf of Mexico *The Leading Edge* Dutta, T., Mavko, G., Mukerji, T., Lane, T. 2009; 28

Cross-property rock physics relations for estimating low-frequency seismic impedance trends from electromagnetic resistivity data *The Leading Edge* Mukerji, T., Mavko, G., Gomez, C. 2009; 28

How micrite content affects the transport, seismic, and reactive properties of carbonate rocks: Implications for 4D seismic *SEG Expanded Abstracts* Vanorio, T., Mavko, G. 2009; 28

Seismic inversion using low-frequency seismic impedance trend computed from CSEM data *SEG Expanded Abstracts* Gomez, C., Mukerji, T., Mavko, G. 2009; 28

Seismic inversion combining rock physics and multiple-point geostatistics *GEOPHYSICS* Gonzalez, E. F., Mukerji, T., Mavko, G. 2008; 73 (1): R11-R21

Factors affecting the sensitivity of the elastic properties to pressure on carbonate rocks *SEG Expanded Abstracts* Scotellaro, C., Mavko, G. 2008; 27

Elastic anisotropy, maturity, and maceral microstructure in organic-rich shales *SEG Expanded Abstracts* Vanorio, T., T., Mukerji, Mavko, G. 2008; 27

Analyzing thresholds for 3D reconstruction of rock from CT-scan images *SEG Expanded Abstracts* Richa, M., T., Mavko, Shell Exploration 2008; 27: 1820

The effect of chemical and physical processes on the acoustic properties of carbonate rocks *The Leading Edge* Vanorio, T., Scotellaro, C., Mavko, G. 2008; 27

Approximate fluid substitution in weakly anisotropic VTI rocks *SEG Expanded Abstracts* Bandyopadhyay, K., Mavko, G. 2008; 27

Estimating the hydrocarbon volume from elastic and resistivity data: A concept *The Leading Edge* Gomez, C., Dvorkin, J., Mavko, G. 2008; 27

Measuring and monitoring heavy-oil reservoir properties *The Leading Edge* Wolf, K., Vanorio, T., Mavko, G. 2008; 27

Granular dynamics simulation for estimating elastic properties of loose unconsolidated frictional packs *SEG Expanded Abstracts* Sain, R., Mukerji, T., Mavko, G. 2008; 27

How does carbonate cementation in sandstones affect seismic response *SEG Expanded Abstracts* Dutta, T., Mukerji, T., Mavko, G. 2008; 27

Elastic anisotropy of clay *SEG Expanded Abstracts* Bandyopadhyay, K., Vanorio, T., Mavko, G., Wenk, H-R., Voltolini, M. 2008; 27

Estimating low frequency seismic impedance from CSEM resistivity using cross-property rock physics, relations *SEG Expanded Abstracts* Mukerji, T., Mavko, G., Gomez, C. 2008; 27

Emerging methodologies to characterize the rock physics properties of organic-rich shales *The Leading Edge* Vanorio, T., Mukerji, T., Mavko, G. 2008; 27

The flaw of averages and the pitfalls of ignoring variability in attribute interpretations *The Leading Edge* Mukerji, T., Mavko, G. 2008; 27

Probabilistic seismic inversion based on rock-physics models *GEOPHYSICS* Spikes, K., Mukerji, T., Dvorkin, J., Mavko, G. 2007; 72 (5): R87-R97

Elastic behaviour of North Sea chalk: A well-log study *GEOPHYSICAL PROSPECTING* Gommesen, L., Fabricius, I. L., Mukerji, T., Mavko, G., Pedersen, J. M. 2007; 55 (3): 307-322

Fluid substitution in shaley sediment using effective porosity *GEOPHYSICS* Dvorkin, J., Mavko, G., Gurevich, B. 2007; 72 (3): O1-O8

Elastic-impedance analysis constrained by rock-physics bounds *GEOPHYSICAL PROSPECTING* Tsuneyama, F., Mavko, G. 2007; 55 (3): 289-306

Constraints on velocity-depth trends from rock physics models *GEOPHYSICAL PROSPECTING* Japsen, P., Mukerji, T., Mavko, G. 2007; 55 (2): 135-154

Quantitative detection of fluid distribution using time-lapse seismic *GEOPHYSICAL PROSPECTING* Tsuneyama, F., Mavko, G. 2007; 55 (2): 169-184

Seismic velocities of unconsolidated sands: Part 2 - Influence of sorting- and compaction-induced porosity variation *GEOPHYSICS* Zimmer, M. A., Prasad, M., Mavko, G., Nur, A. 2007; 72 (1): E15-E25

Quantifying spatial trend of sediment parameters in channelized turbidite, West Africa *SEG Expanded Abstracts* Dutta, T., Mukerji, T., Mavko, G. 2007; 26

To fluid-substitute or not to fluid-substitute: How pore shape and chemical processes affect Gassmann's predictability *SEG Expanded Abstracts* Scotellaro, C., Vanorio, T., Mavko, G. 2007; 26

The effect of mineral composition and pressure on carbonate rocks *SEG Expanded Abstracts* Scotellaro, C., Vanorio, T., Mavko, G. 2007; 26

Rock physics modeling constrained by sequence stratigraphy *The Leading Edge* Dutta, T., T., Mukerji, Mavko, G. 2007; 26

Evolution of elastic properties and fabric tensor in a deposition model using granular dynamics simulation *SEG Expanded Abstracts* Sain, R., Mukerji, T., Mavko, G., Keehm, Y. 2007; 26

Rock physics-based integration of geologic and geophysical data for fracture characterization *The Leading Edge* Sava, D., Mavko, G. 2007; 26

PSEI modeling of bitumen sand - implications for reservoir characterization and monitoring *SEG Expanded Abstracts* Wolf, K., Mavko, G. 2007; 26

Seismic velocities of unconsolidated sands: Part 1 - Pressure trends from 0.1 to 20 MPa *GEOPHYSICS* Zimmer, M. A., Prasad, M., Mavko, G., Nur, A. 2007; 72 (1): E1-E13

Seismic reflections of gas hydrate from perturbational forward modeling *GEOPHYSICS* Cordon, I., Dvorkin, J., Mavko, G. 2006; 71 (6): F165-F171

Modeling attenuation in reservoir and nonreservoir rock *The Leading Edge* Dvorkin, J. P., Mavko, G. 2006; 25: 194-197

Rock physics and multiple-point geostatistics for seismic inversion *76th Annual International Meeting SEG* Gonzalez, E. F., Mavko, G., Mukerji, T. 2006: 2047-2051

Image analysis and pattern recognition for porosity estimation from thin sections *76th Annual International Meeting SEG* Richa, R., Mukerji, T., Mavko, G., Keehm, Y. 2006: 1968-1972

Attenuation and velocity dispersion modeling of bitumen saturated sand *76th Annual International Meeting SEG* Wolf, K., Mukerji, T., Mavko, G. 2006: 1993-1997

Rock-physics model-based seismic inversion *76th Annual International Meeting SEG* Spikes, K. T., Dvorkin, J., Mavko, G. 2006: 1645-1649

Seismic Fluid Prediction in Heterogeneous Reservoirs *EAGE 68th Meeting* Avseth, P. A., van Wijngaarden, A. J., Johansen, T. A., Mavko, G. 2006

Combined porosity, saturation, and net-to-gross estimation from rock physics template *76th Annual International Meeting* Avseth, P., van Wijngaarden, A., Mavko, G., Johansen, T. A. 2006: 1856-1860

Elastic and petrophysical bounds for unconsolidated sediments *76th Annual International Meeting SEG* Hacikoylu, P., Dvorkin, J., Mavko, G. 2006: 1762-1766

Reservoir-quality prediction by integrating sequence stratigraphy and rock physics *76th Annual International Meeting SEG* Dutta, T., Mukerji, T., Mavko, G., Avseth, P. 2006: 1811-1815

Vp/Vs ratio in gas-pressured saturated sandstones *76th Annual International Meeting SEG* Vanorio, T., Mavko, G. 2006: 1545-1549

Detection of stress-induced velocity anisotropy in unconsolidated sands *The Leading Edge* Vega, S., Mavko, G., Nur, A., Prasad, M. 2006; 25: 252-256

Resistivity-velocity transforms revisited *The Leading Edge* Hacikoylu, P., Dvorkin, J., Mavko, G. 2006; 25: 1006-1009

A new method for constraining total porosity; the new total porosity-electrical resistivity upper bound *The Leading Edge* Wempe, W., Mavko, G. 2006; 25: 714-719

Ultrasonic velocities of North Sea chalk samples: influence of porosity, fluid content and texture *GEOPHYSICAL PROSPECTING* Rogen, B., Fabricius, I. L., Japsen, P., Hoier, C., Mavko, G., Pedersen, J. M. 2005; 53 (4): 481-496

Fault and fracture systems in a fold and thrust belt: An example from Bolivia *AAPG BULLETIN* Florez-Nino, J. M., Aydin, A., Mavko, G., Antonellini, M., Ayaviri, A. 2005; 89 (4): 471-493

Seismic Fluid Prediction in Poorly Consolidated and Clay Laminated Sands *67th Mtg.: Eur. Assn. Geosci. Eng.* Avseth, P., van Wijngaarden, A., Flesche, H., Fristad, T., Rykkje, J., Mavko, G. 2005

Chalk Background Velocity ñ Influence of Effective Stress and Texture *67th Mtg.: Eur. Assn. Geosci. Eng.* Japsen, P., Mavko, G., Gommesen, L., Jacobsen, F., Vejbaek, O., Rasmussen, R., Schiott, C. R. 2005

Quantitative seismic interpretation Avseth, P., Mukerji, T., Mavko, G. Cambridge University Press. 2005

P-Wave Attenuation in Reservoir and Non-Reservoir Rock *67th Mtg.: Eur. Assn. Geosci. Eng.* Dvorkin, J., Mavko, G. 2005

Modeling Seismic Response of Danish Chalk Reservoirs to Changes Induced by Production *67th Mtg.: Eur. Assn. Geosci. Eng.* Dorn-Lopez, D., Sorensen, A., Mavko, G., Fabricius, I. L., Hedegaard, K. 2005

The flaw of averages and the pitfalls of ignoring variability in rock physics interpretation *75th Ann. Internat. Mtg. Soc. of Expl. Geophys.* Mukerji, T., Mavko, G. 2005 : 747-750

Bootstrapping AVA for Uncertainty Assessment in Lithology and Fluid Identification *67th Mtg.: Eur. Assn. Geosci. Eng.* Gonzalez, E. F., Mavko, G., Mukerji, T. 2005

Quantitative integration of geological and seismic data using statistical rock physics: Example for fracture characterization *75th Ann. Internat. Mtg.: Soc. of Expl. Geophys.* Sava, D. C., Mavko, G. 2005: 1613-1616

A rock physics and attenuation analysis of a well from the Gulf of Mexico *5th Ann. Internat. Mtg.: Soc. of Expl. Geophys.* Mavko, G., Dvorkin, J., Walls, J. D. 2005: 1585-1588

Automatic detection of data inconsistencies for AVA analysis: Bootstrap and LMS regression *75th Ann. Internat. Mtg.: Soc. of Expl. Geophys.* Gonzalez, E. F., Mukerji, T., Mavko, G. 2005: 242-245

Velocity anisotropy estimation for brine-saturated sandstone and shale *The Leading Edge* Tsuneyama, F., Mavko, G. 2005; 24: 882-888

A theoretical estimate of S-wave attenuation in sediment *75th Ann. Internat. Mtg. Soc. of Expl. Geophys.* Mavko, G., Dvorkin, J., Walls, J. D. 2005: 1469-1472

Influence of porosity and pore fluid on acoustic properties of chalk: AVO response from oil, South Arne Field, North Sea *PETROLEUM GEOSCIENCE* Japsen, P., Bruun, A., Fabricius, I. L., Rasmussen, R., Vejbaek, O. V., Pedersen, J. M., Mavko, G., Mogensen, C., Hoier, C. 2004; 10 (4): 319-330

Stochastic reservoir characterization using prestack seismic data *GEOPHYSICS* Eidsvik, J., Avseth, P., Omre, H., Mukerji, T., Mavko, G. 2004; 69 (4): 978-993

Identification of hydrocarbons in chalk reservoirs from surface seismic data *Geological Survey of Denmark and Greenland Bulletin* Japsen, P., Bruun, A., Fabricius, I., Mavko, G. 2004; 7: 13-16

Pressure-solution and the rock physics diagenetic trend in quartzose sandstones *74th Ann. Internat. Mtg.: Soc. of Expl. Geophys.* Florez-Nino, J., Mavko, G. 2004: 1702-1705

A practical procedure for P-to-S elastic impedance (PSEI) inversion: Well log and synthetic seismic examples for identifying partial gas saturations *74th Ann. Internat. Mtg.: Soc. of Expl. Geophys.* Gonzalez, E. F., Mavko, G., Mukerji, T. 2004: 1782-1785

Azimuthal analysis of reflectivity for fracture characterization: Rock physics modeling and field example *74th Ann. Internat. Mtg.: Soc. of Expl. Geophys.* Sava, D. C., Mavko, G. 2004: 1583

Example 74th Ann. Internat. Mtg.: Soc. of Expl. Geophys. Sava, D. C., Florez, J., Mukerji, T., Mavko, G. 2004: 1505-1586

A practical procedure for P-to-S "elastic" impedance (PSEI) inversion: Well log and synthetic seismic examples for identifying partial gas saturations *74th Ann. Internat. Mtg. Soc. of Expl. Geophys.* Gonzalez, E. F., Mavko, G., Mukerji, T. 2004

Effect of Pore Fluid on Acoustic Properties of Chalk - AVO-Response from Oil, South Arne Field, North Sea *66th Mtg.: Eur. Assn. Geosci. Eng.* Japsen, P., Bruun, A., Fabricius, I. L., Rasmussen, R., Vejbaek, O. V., Pedersen, J. M., Mavko, G., Mogensen, C. 2004

Impact of flow-simulation parameters on saturation scales and seismic velocity *GEOPHYSICS* Sengupta, M., Mavko, G. 2003; 68 (4): 1267-1280

Quantifying subresolution saturation scales from time-lapse seismic data: A reservoir monitoring case study *GEOPHYSICS* Sengupta, M., Mavko, G., Mukerji, T. 2003; 68 (3): 803-814

Near and far offset P-to-S elastic impedance for discriminating fizz water from commercial gas, *The Leading Edge* Gonzalez, E. F., Mukerji, T., Mavko, G., Michelena, R. J. 2003; 22: 1012-1015

Attenuation at Patchy Saturation: A Model *65th Mtg.: Eur. Assn. Geosci. Eng.* Dvorkin, J., Walls, J., Taner, T., Derzhi, N., Mavko, G. 2003

Seismic wave attenuation at full water saturation *73rd Ann. Internat. Mtg.: Soc. of Expl. Geophys.* Dvorkin, J., Mavko, G., Walls, J. 2003: 1684-1686

Comparative study of velocities under hydrostatic and nonhydrostatic stress in sands *73rd Ann. Internat. Mtg.: Soc. of Expl. Geophys.* Vega, S., Prasad, M., Mavko, G. 2003: 1231-1234

Stratification in loose sediments and its seismic signature *73rd Ann. Internat. Mtg. Soc. of Expl. Geophys.* Vega, S., Mukerji, T., Mavko, G., Prasad, M. 2003 : 1219-1222

Far offset P-to-S elastic impedance for lithology and partial gas saturation (fizz water) identification: Applications with well logs *73rd Ann. Internat. Mtg.: Soc. of Expl. Geophys.* Gonzalez, E., Mukerji, T., Mavko, G., Michelena, R. 2003: 1446-1449

Variability of fracture density along the strike azimuth of folded structures *3rd Ann. Internat. Mtg.: Soc. of Expl. Geophys.* Florez-Nino, J., Aydin, A., Mavko, G., Antonellini, M., Ayaviri, A. 2003: 1553-1556

Effect of glauconite on the elastic properties, porosity and permeability of reservoir rocks *The Leading Edge* Diaz, E., Prasad, M., Mavko, G., Dvorkin, J. 2003; 22: 42-45

Empirical velocity-pressure and porosity-pressure trends in unconsolidated sands *SEG Annual Meeting Expanded Technical Programs* Zimmer, M. A., Prasad, M., Mavko, G. 2002: 1866-1869

Seismic fracture characterization using statistical rock physics: James Limestone reservoir, Neuville Field *72nd. Annual International Meeting SEG* Sava, D. C., Florez, J., Mukerji, T., Mavko, G. 2002

Elastic moduli of chalk as a reflection of porosity, sorting, and irreducible water saturation *SEG Annual Meeting* Fabricius, I. L., Mavko, G., Morgensen, C., Japsen, P. 2002: 1903-1906

Effective porosity-total porosity model applied to Fontainebleau sandstone. *SEG Annual Meeting* Wempe, W., Mavko, G. 2002: 1870-1872

Effect of fluid substitution on ultrasonic velocities in chalk plugs, South Arne Field, North Sea *SEG Annual Meeting Expanded Technical Program* Japsen, P., Hoier, C., Rasmussen, J. B., Fabricius, I. L., Mavko, G., Pedersen, J. M. 2002: 1881-1884

Fluid substitution studies for North Sea chalk logging data *SEG Annual Meeting Expanded Technical Program* Gommessen, L., Mavko, G., Mukerji, T., Fabricius, I. L. 2002 : 340-343

Seismic reservoir prediction using Bayesian integration of rock physics and Markov random fields: A North Sea example *The Leading Edge* Mavko, G., Avseth, P. 2002; 21 (3): 290-294

Pressure and porosity influences on V (sub p) -V (sub s) ratio in unconsolidated sands *The Leading Edge* Zimmer, M., Prasad, M., Mavko, G. 2002; 21: 178, 180-183

Rock physics diagnostic of North Sea sands: Link between microstructure and seismic properties *Geophysical Research Letters* Avseth, P., Dvorkin, J., Mavko, G., Rykkje, J. 2002; 27: 2761-2764

Understanding amplitude anomalies and pit(Fall) in offshore Venezuela: Quantifying the effects of geologic heterogeneities using statistical rock physics *SEG Annual Meeting Expanded Technical Program* Mukerji, T., T., Gonzalez, E., E., Cabos, C., C., Hung, E., E., Mavko, G., G. 2002: 2439-2442

Seismic reservoir mapping from 3-D AVO in a North Sea turbidite system *GEOPHYSICS* Avseth, P., Mukerji, T., Jorstad, A., Mavko, G., Veggeand, T. 2001; 66 (4): 1157-1176

Mapping lithofacies and pore-fluid probabilities in a North Sea reservoir: Seismic inversions and statistical rock physics *GEOPHYSICS* Mukerji, T., Jorstad, A., Avseth, P., Mavko, G., Granli, J. R. 2001; 66 (4): 988-1001

Seismic detection of pore fluids: Pit(Fall) of ignoring anisotropy *SEG Annual Meeting*, Sava, D., Mukerji, T., Diaz, M., Mavko, G. 2001

Rock physics analysis and fracture modeling of the San Andres reservoir *71st. Ann. Internat. Mtg: Soc. of Expl. Geophysics* Sava, D., Mukerji, T., Florez, J., Mavko, G. 2001: 1748-1751

Rock physics of glauconite and glauconite sandstone reservoirs *AAPG Annual meeting* Diaz, E., Gutierrez, M. A., Dvorkin, J., Prasad, M., Mavko, G. 2001: 50

Elastic properties of glauconite and glauconitic sandstone reservoir. *71st Annual International Meeting SEG* Diaz, E., Prasad, M., Dvorkin, J., Mavko, G. 2001: 1772-1775

AVO signatures of Eastern Venezuela gas sands: feasibility and uncertainty estimation *71st. Ann. Internat. Mtg: Soc. of Expl. Geophys.* Gonzalez, E., Mukerji, T., Mavko, G. 2001: 215-218

Rock physics of Marls *71st Ann. Internat. Mtg: Soc. of Expl. Geophys.* Dvorkin, J., Walls, J., Mavko, G. 2001: 1784-1787

Rock physics and AVO analysis for lithofacies and pore prediction in a North Sea oil field *The Leading Edge* Avseth, P., Mukerji, T., Mavko, G., Tysssekvam, J. A. 2001; 20: 429-435

Three distinct porosity domains defined physically, hydraulically, electrically, and acoustically *The Leading Edge* Wempe, W., Mavko, G. 2001; 20: 198-199

Mapping lithofacies & pore fluid probabilities in a N. Sea reservoir: Seismic inversion and statistical rock physics *Geophysics* Mukerji, T., Jorstad, A., Avseth, P., Mavko, G., Granli, J. 2001; 66: 988-1001

Statistical rock physics: combining rock physics, information theory, and geostatistics to reduce uncertainty in seismic reservoir characterization *The Leading Edge* Mukerji, T., Avseth, P., Mavko, G., Takahashi, I., Gonzalez, E. F. 2001; 20: 313-319

Rock physics diagnostic of North Sea sands: Link between microstructure and seismic properties *GEOPHYSICAL RESEARCH LETTERS* Avseth, P., Dvorkin, J., Mavko, G., Rykkje, J. 2000; 27 (17): 2761-2764

Vp-Vs relations of sandstones and carbonates: Their implication about the pore structures *SEG Annual Meeting* Takahashi, I., Mukerji, T., Mavko, G. 2000

Acoustic properties in rocks saturated with petroliferous liquids *Handbook OF Elastic Properties of Solids, Liquids and Gases* Prasad, M., Nur, A., Mavko, G., Dvorkin, J. edited by Levy, M., Bass, H., Stern, R. Academic Press. 2000

Facies classification using P-to-P and P-to-S AVO attributes *SEG Annual Meeting* Gonzalez, E., Mukerji, T., Mavko, G. 2000

Integrating time-lapse seismic and flow simulation to map saturation changes: A reservoir monitoring case study *SEG Annual Meeting* Sengupta, M., Mavko, G., Mukerji, T. 2000

Acoustic properties of petroliferous liquids *Handbook of Elastic Properties of Solids, Liquids and Gases* Prasad, M., Nur, A., Mavko, G., Dvorkin, J. edited by Levy, M., Bass, H., Stern, R. Academic Press. 2000

Use of compressional and shear wave velocity for overpressure detection *Offshore Technology Conference* Walls, J., Dvorkin, J., Mavko, G., Nur, A. 2000: 199-203

Rock physics diagnostics and modeling of P-P and P-S seismic attributes in the Alba Field *SEG Annual Meeting* Mukerji, T., Takahashi, I., Gonzalez, E., Mavko, G. 2000

Overpressure detection from compressional- and shear-wave data *GEOPHYSICAL RESEARCH LETTERS* Dvorkin, J., Mavko, G., Nur, A. 1999; 26 (22): 3417-3420

Model-based shear-wave velocity estimation versus empirical regressions *GEOPHYSICAL PROSPECTING* Jorstad, A., Mukerji, T., Mavko, G. 1999; 47 (5): 785-797

Predicting clay content and porosity from gamma-ray and conductivity logs *PROCEEDINGS OF THE SYMPOSIUM ON THE APPLICATION OF GEOPHYSICS TO ENGINEERING AND ENVIRONMENTAL PROBLEMS* Corona, W. W., Mavko, G. 1999: 425-433

Sensitivity analysis of seismic fluid detection *69th Ann. Internat. Mtg. Soc. Expl. Geophys.* Sengupta, M., Mavko, G. 1999: 180-183

Discriminating seismic signatures of steam injection from lithology variations: Feasibility study in a Venezuela heavy oil reservoir *69th Ann. Internat. Mtg.* Gonzalez, E., Mukerji, T., Mavko, G. 1999: 1659-1662

Effect of thin layering on seismic reflectivity: Estimation of sand/shale ratio using stochastic simulation and Bayes inversion *60th Ann. Internat. Mtg. Soc. Expl. Geophys.* Takahashi, I., Mukerji, T., Mavko, G. 1999: 1787-1790

To select optimal seismic attributes for reservoir property estimation: Application of information theory *69th Ann. Internat. Mtg., Soc. Expl. Geophys.* Takahashi, I., Mukerji, T., Mavko, G. 1999 : 1584-1587

Scale matching with factorial kriging for improved porosity estimation from seismic data *MATHEMATICAL GEOLOGY* Yao, T. T., Mukerji, T., Journel, A., Mavko, G. 1999; 31 (1): 23-46

Integrating seismic lithofacies prediction and depositional geometry analysis for reservoir

Integrating seismic lithofacies prediction and depositional geometry analysis for reservoir delineation in a N. Sea turbidite field *69th Ann. Internat. Mtg. Soc. Expl. Geophys.* Avseth, P., Mukerji, T., Mavko, G., Tyssekvam, J. 1999: 752-755

Near and far offset impedances: Seismic attributes for identifying lithofacies and pore fluids *GEOPHYSICAL RESEARCH LETTERS* Mukerji, T., Jorstad, A., Mavko, G., Granli, J. R. 1998; 25 (24): 4557-4560

A rock physics strategy for quantifying uncertainty in common hydrocarbon indicators *GEOPHYSICS* Mavko, G., Mukerji, T. 1998; 63 (6): 1997-2008

Bounds on low-frequency seismic velocities in partially saturated rocks *GEOPHYSICS* Mavko, G., Mukerji, T. 1998; 63 (3): 918-924

Comparison of the Krief and critical porosity models for prediction of porosity and V-P/V-S *GEOPHYSICS* Mavko, G., Mukerji, T. 1998; 63 (3): 925-927

Fluid distribution effect on sonic attenuation in partially saturated limestones *GEOPHYSICS* Cadoret, T., Mavko, G., Zinszner, B. 1998; 63 (1): 154-160

Scales of reservoir heterogeneities and impact of seismic resolution on geostatistical integration *MATHEMATICAL GEOLOGY* Mukerji, T., Mavko, G., Rio, P. 1997; 29 (7): 933-950

The effect of a percolation threshold in the Kozeny-Carman relation *GEOPHYSICS* Mavko, G., Nur, A. 1997; 62 (5): 1480-1482

Velocity dispersion and upscaling in a laboratory-simulated VSP *GEOPHYSICS* Rio, P., Mukerji, T., Mavko, G., Marion, D. 1996; 61 (2): 584-593

SCALE EFFECTS ON DYNAMIC WAVE-PROPAGATION IN HETEROGENEOUS MEDIA *GEOPHYSICAL RESEARCH LETTERS* Yin, H. Z., Mavko, G., Mukerji, T., Nur, A. 1995; 22 (23): 3163-3166

SEISMIC PORE-SPACE COMPRESSIBILITY AND GASSMANN'S RELATION *GEOPHYSICS* Mavko, G., Mukerji, T. 1995; 60 (6): 1743-1749

FLUID SUBSTITUTION - ESTIMATING CHANGES IN V-P WITHOUT KNOWING V-S *GEOPHYSICS* Mavko, G., Chan, C., Mukerji, T. 1995; 60 (6): 1750-1755

SCALE-DEPENDENT SEISMIC VELOCITY IN HETEROGENEOUS MEDIA *GEOPHYSICS* Mukerji, T., Mavko, G., Mujica, D., Lucet, N. 1995; 60 (4): 1222-1233

PREDICTING STRESS-INDUCED VELOCITY ANISOTROPY IN ROCKS *GEOPHYSICS* Mavko, G., Mukerji, T., Godfrey, N. 1995; 60 (4): 1081-1087

DIFFERENTIAL EFFECTIVE-MEDIUM MODELING OF ROCK ELASTIC-MODULI WITH CRITICAL POROSITY CONSTRAINTS *GEOPHYSICAL RESEARCH LETTERS* Mukerji, T., Berryman, J., Mavko, G., Berge, P. 1995; 22 (5): 555-558

SEISMIC METHODS FOR IMAGING PHYSICAL PROPERTIES OF THE EARTH Mavko, G., Lucet, N., Mukerji, T. IEEE. 1995: 2817-2820

SQUIRT FLOW IN FULLY SATURATED ROCKS *GEOPHYSICS* Dvorkin, J., Mavko, G., Nur, A. 1995; 60 (1): 97-107

SCALE EFFECTS ON VELOCITY DISPERSION - FROM RAY TO EFFECTIVE-MEDIUM THEORIES IN STRATIFIED MEDIA *GEOPHYSICS* Marion, D., Mukerji, T., Mavko, G. 1994; 59 (10): 1613-1619

SEISMIC SIGNATURES OF RESERVOIR TRANSPORT-PROPERTIES AND PORE FLUID DISTRIBUTION *GEOPHYSICS* Akbar, N., Mavko, G., Nur, A., Dvorkin, J. 1994; 59 (8): 1222-1236

PORE FLUID EFFECTS ON SEISMIC VELOCITY IN ANISOTROPIC ROCKS *GEOPHYSICS* Mukerji, T., Mavko, G. 1994; 59 (2): 233-244

ESTIMATING SEISMIC VELOCITIES AT ULTRASONIC FREQUENCIES IN PARTIALLY SATURATED ROCKS *GEOPHYSICS* Mavko, G., NOLENHOEKSEMA, R. 1994; 59 (2): 252-258

THE RELATION BETWEEN SEISMIC P-WAVE AND S-WAVE VELOCITY DISPERSION IN SATURATED ROCKS *GEOPHYSICS* Mavko, G., JIZBA, D. 1994; 59 (1): 87-92

CRITICAL POROSITY - A PHYSICAL BOUNDARY IN POROELASTICITY Yin, H., Nur, A., Mavko, G. PERGAMON-ELSEVIER SCIENCE LTD. 1993: 805-808

NARROW SUBDUCTING SLABS AND THE ORIGIN OF BACKARC BASINS *TECTONOPHYSICS* Dvorkin, J., Nur, A., Mavko, G., BENAVERAHAM, Z. 1993; 227 (1-4): 63-79

GEOPHYSICAL-HYDROLOGICAL IDENTIFICATION OF FIELD PERMEABILITIES THROUGH BAYESIAN UPDATING *WATER RESOURCES RESEARCH* Copty, N., Rubin, Y., Mavko, G. 1993; 29 (8): 2813-2825

MAPPING PERMEABILITY IN HETEROGENEOUS AQUIFERS USING HYDROLOGIC AND SEISMIC DATA *WATER RESOURCES RESEARCH* Rubin, Y., Mavko, G., Harris, J. 1992; 28 (7): 1809-1816

THE DYNAMICS OF VISCOUS COMPRESSIBLE FLUID IN A FRACTURE *GEOPHYSICS*

Dvorkin, J., Mavko, G., Nur, A. 1992; 57 (5): 720-726
ESTIMATING GRAIN-SCALE FLUID EFFECTS ON VELOCITY DISPERSION IN ROCKS
GEOPHYSICS Mavko, G., JIZBA, D. 1991; 56 (12): 1940-1949
THE EFFECT OF CEMENTATION ON THE ELASTIC PROPERTIES OF GRANULAR
MATERIAL *MECHANICS OF MATERIALS* Dvorkin, J., Mavko, G., Nur, A. 1991; 12 (3-4): 207-
217
THE OSCILLATIONS OF A VISCOUS COMPRESSIBLE FLUID IN AN ARBITRARILY-SHAPED
PORE *MECHANICS OF MATERIALS* Dvorkin, J., Mavko, G., Nur, A. 1990; 9 (2): 165-179
EFFECTS OF THE 1983 COALINGA, CALIFORNIA, EARTHQUAKE ON CREEP ALONG THE
SAN ANDREAS FAULT *BULLETIN OF THE SEISMOLOGICAL SOCIETY OF AMERICA*
MAVKO, G. M., Schulz, S., Brown, B. D. 1985; 75 (2): 475-489
LONG-TERM FAULT CREEP OBSERVATIONS IN CENTRAL CALIFORNIA *JOURNAL OF*
GEOPHYSICAL RESEARCH SCHULZ, S. S., MAVKO, G. M., BURFORD, R. O., Stuart, W. D.
1982; 87 (NB8): 6977-6982
WAVE ATTENUATION IN PARTIALLY SATURATED ROCKS *GEOPHYSICS* MAVKO, G. M.,
Nur, A. 1979; 44 (2): 161-178
EARTHQUAKE INSTABILITY ON A STRIKE-SLIP FAULT *JOURNAL OF GEOPHYSICAL*
RESEARCH Stuart, W. D., MAVKO, G. M. 1979; 84 (NB5): 2153-2160
SEISMIC-WAVE ATTENUATION IN ROCKS *REVIEWS OF GEOPHYSICS* Mavko, G.,
Kjartansson, E., Winkler, K. 1979; 17 (6): 1155-1164
FRICTIONAL ATTENUATION - INHERENT AMPLITUDE DEPENDENCE *JOURNAL OF*
GEOPHYSICAL RESEARCH MAVKO, G. M. 1979; 84 (NB9): 4769-4775
EFFECT OF NON-ELLIPTICAL CRACKS ON COMPRESSIBILITY OF ROCKS *JOURNAL OF*
GEOPHYSICAL RESEARCH MAVKO, G. M., Nur, A. 1978; 83 (NB9): 4459-4468
MELT SQUIRT IN ASTHENOSPHERE *JOURNAL OF GEOPHYSICAL RESEARCH* Mavko,
G., Nur, A. 1975; 80 (11): 1444-1448
POSTSEISMIC VISCOELASTIC REBOUND *SCIENCE* Nur, A., Mavko, G. 1974; 183 (4121):
204-206

