Mrinal K Sen

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149 papers	3,818 citations	33 h-index	58 g-index
177 ext. papers	4,737 ext. citations	2.5 avg, IF	5.9 L-index

#	Paper	IF	Citations
149	Nonlinear one-dimensional seismic waveform inversion using simulated annealing. *Geophysics*, **1991**, 56, 1624-1638	3.1	341
148	Nonlinear multiparameter optimization using genetic algorithms: Inversion of plane-wave seismograms. *Geophysics*, **1991**, 56, 1794-1810	3.1	270
147	Bayesian inference, GibbsTsampler and uncertainty estimation in geophysical inversion1. *Geophysical Prospecting*, **1996**, 44, 313-350	1.9	212
146	Global Optimization Methods in Geophysical Inversion **2013**,		188
145	A new time□pace domain high-order finite-difference method for the acoustic wave equation. *Journal of Computational Physics*, **2009**, 228, 8779-8806	4.1	143
144	Grid dispersion and stability criteria of some common finite-element methods for acoustic and elastic wave equations. *Geophysics*, **2007**, 72, T81-T95	3.1	134
143	The interior penalty discontinuous Galerkin method for elastic wave propagation: grid dispersion. *Geophysical Journal International*, **2008**, 175, 83-93	2.6	111
142	An implicit staggered-grid finite-difference method for seismic modelling. *Geophysical Journal International*, **2009**, 179, 459-474	2.6	94
141	A hybrid scheme for absorbing edge reflections in numerical modeling of wave propagation. *Geophysics*, **2010**, 75, A1-A6	3.1	91
140	Born integral, stationary phase and linearized reflection coefficients in weak anisotropic media. *Geophysical Journal International*, **2004**, 158, 225-238	2.6	82
139	Artificial neural networks for parameter estimation in geophysics. *Geophysical Prospecting*, **2000**, 48, 21-47	1.9	82
138	A prestack basis pursuit seismic inversion. *Geophysics*, **2013**, 78, R1-R11	3.1	80
137	Computation of differential seismograms and iteration adaptive regularization in prestack waveform inversion. *Geophysics*, **2003**, 68, 2026-2039	3.1	79
136	Prestack and poststack inversion using a physics-guided convolutional neural network. *Interpretation*, **2019**, 7, SE161-SE174	1.4	75
135	Stability of the high-order finite elements for acoustic or elastic wave propagation with high-order time stepping. *Geophysical Journal International*, **2010**, 181, 577-590	2.6	73
134	Estimating a starting model for full-waveform inversion using a global optimization method. *Geophysics*, **2016**, 81, R211-R223	3.1	61
133	Finite-difference modeling with adaptive variable-length spatial operators. *Geophysics*, **2011**, 76, T79-T89	3.1	60

132	Nonlinear inversion of resistivity sounding data. *Geophysics*, **1993**, 58, 496-507	3.1	60
131	Least-squares reverse time migration in elastic media. *Geophysical Journal International*, **2017**, 208, 1103-1125	2.6	57
130	Application of Very Fast Simulated Annealing to the Determination of the Crustal Structure Beneath Tibet. *Geophysical Journal International*, **1996**, 125, 355-370	2.6	57
129	Time–space domain dispersion-relation-based finite-difference method with arbitrary even-order accuracy for the 2D acoustic wave equation. *Journal of Computational Physics*, **2013**, 232, 327-345	4.1	56
128	Vertical fracture detection by exploiting the polarization properties of ground-penetrating radar signals. *Geophysics*, **2004**, 69, 803-810	3.1	56
127	Automatic NMO correction and velocity estimation by a feedforward neural network. *Geophysics*, **1998**, 63, 1696-1707	3.1	56
126	Transdimensional seismic inversion using the reversible jump Hamiltonian Monte Carlo algorithm. *Geophysics*, **2017**, 82, R119-R134	3.1	55
125	Finite-difference modelling of S-wave splitting in anisotropic media. *Geophysical Prospecting*, **2008**, 56, 293-312	1.9	55
124	Hybrid optimization methods for geophysical inversion. *Geophysics*, **1997**, 62, 1196-1207	3.1	51
123	Optimal parameter and uncertainty estimation of a land surface model: A case study using data from Cabauw, Netherlands. *Journal of Geophysical Research*, **2003**, 108,		44
122	Full waveform inversion of reflection seismic data for ocean temperature profiles. *Geophysical Research Letters*, **2008**, 35,	4.9	42
121	Effective finite-difference modelling methods with 2-D acoustic wave equation using a combination of cross and rhombus stencils. *Geophysical Journal International*, **2016**, 206, 1933-1958	2.6	42
120	Plane-wave depth migration. *Geophysics*, **2006**, 71, S261-S272	3.1	40
119	Elastic wave propagation in fractured media using the discontinuous Galerkin method. *Geophysics*, **2016**, 81, T163-T174	3.1	36
118	A comparison of finite-difference and spectral-element methods for elastic wave propagation in media with a fluid-solid interface. *Geophysical Journal International*, **2015**, 200, 278-298	2.6	35
117	Impacts of data length on optimal parameter and uncertainty estimation of a land surface model. *Journal of Geophysical Research*, **2004**, 109,		35
116	Acoustic VTI modeling with a time-space domain dispersion-relation-based finite-difference scheme. *Geophysics*, **2010**, 75, A11-A17	3.1	33
115	Prestack migration velocity estimation using nonlinear methods. *Geophysics*, **1996**, 61, 138-150	3.1	28

114	Joint inversion of first arrival seismic travel-time and gravity data. *Journal of Geophysics and Engineering*, **2005**, 2, 277-289	1.3	27
113	Hopfield neural networks, and mean field annealing for seismic deconvolution and multiple attenuation. *Geophysics*, **1997**, 62, 992-1002	3.1	26
112	Autonomic oil reservoir optimization on the Grid. *Concurrency Computation Practice and Experience*, **2005**, 17, 1-26	1.4	26
111	Non-linear inversion of resistivity profiling data for some regular geometrical bodies1. *Geophysical Prospecting*, **1995**, 43, 979-1003	1.9	25
110	A hybrid absorbing boundary condition for elastic staggered-grid modelling. *Geophysical Prospecting*, **2012**, 60, 1114-1132	1.9	24
109	Enforcing smoothness and assessing uncertainty in non-linear one-dimensional prestack seismic inversion. *Geophysical Prospecting*, **2006**, 54, 239-259	1.9	21
108	Use of VFSA for resolution, sensitivity and uncertainty analysis in 1D DC resistivity and IP inversion. *Geophysical Prospecting*, **2003**, 51, 393-408	1.9	21
107	Time-space-domain mesh-free finite difference based on least squares for 2D acoustic-wave modeling. *Geophysics*, **2017**, 82, T143-T157	3.1	20
106	3D acoustic wave modelling with time-space domain dispersion-relation-based finite-difference schemes and hybrid absorbing boundary conditions. *Exploration Geophysics*, **2011**, 42, 176-189	1	20
105	Prestack plane-wave Kirchhoff migration in laterally varying media. *Geophysics*, **1996**, 61, 1068-1079	3.1	20
104	Deep crustal seismic reflection images from the Dharwar craton, Southern India3vidence for the Neoarchean subduction. *Geophysical Journal International*, **2018**, 212, 777-794	2.6	19
103	2D Full-Waveform Inversion and Uncertainty Estimation using the Reversible Jump Hamiltonian Monte Carlo **2017**,		19
102	Background velocity estimation using non-linear optimization for reflection tomography and migration misfit. *Geophysical Prospecting*, **1998**, 46, 51-78	1.9	19
101	Double-plane-wave reverse time migration in the frequency domain. *Geophysics*, **2016**, 81, S367-S382	3.1	18
100	Predicting subsurface CO2 movement: From laboratory to field scale. *Geophysics*, **2012**, 77, M27-M37	3.1	17
99	Choice of regularization weight in basis pursuit reflectivity inversion. *Journal of Geophysics and Engineering*, **2015**, 12, 70-79	1.3	16
98	Time-lapse seismic data registration and inversion for CO2 sequestration study at Cranfield. *Geophysics*, **2013**, 78, B329-B338	3.1	16
97	Split-step Fourier migration of GPR data in lossy media. *Geophysics*, **2006**, 71, K77-K91	3.1	15

96	Least-squares path-summation diffraction imaging using sparsity constraints. *Geophysics*, **2019**, 84, S187-S200	3.1	13
95	Crustal and uppermost mantle structure in the Middle East: assessing constraints provided by jointly modelling Ps and Sp receiver functions and Rayleigh wave group velocity dispersion curves. *Geophysical Journal International*, **2015**, 201, 783-810	2.6	13
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92	Numerical modeling of wave equation by a truncated high-order finite-difference method. *Earthquake Science*, **2009**, 22, 205-213	1.5	11
91	Using different hydrological variables to assess the impacts of atmospheric forcing errors on optimization and uncertainty analysis of the CHASM surface model at a cold catchment. *Journal of Geophysical Research*, **2005**, 110,		11
90	An improved hybrid absorbing boundary condition for wave equation modeling. *Journal of Geophysics and Engineering*, **2018**, 15, 2602-2613	1.3	11
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88	Common Reflection Surface Stack Imaging of the Proterozoic Chambal Valley Vindhyan Basin and Its Boundary Fault in the Northwest India: Constraints on Crustal Evolution and Basin Formation. *Tectonics*, **2018**, 37, 1393-1410	4.3	9
87	Unsupervised physics-based neural networks for seismic migration. *Interpretation*, **2019**, 7, SE189-SE200	1.4	9
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85	Ray-Born inversion for fracture parameters. *Geophysical Journal International*, **2010**, 180, 1274-1288	2.6	9
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83	A new Fourier azimuthal amplitude variation fracture characterization method: Case study in the Haynesville Shale. *Geophysics*, **2018**, 83, WA101-WA120	3.1	9
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71	Frequency-dependent AVO analysis using the scattering response of a layered reservoir. *Geophysics* , **2020**, 85, N1-N16	3.1	7
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64	Simultaneous stochastic inversion of prestack seismic data using hybrid evolutionary algorithm **2010**,		6
63	A gradient-based Markov chain Monte Carlo method for full-waveform inversion and uncertainty analysis. *Geophysics*, **2021**, 86, R15-R30	3.1	6
62	Frequency-domain double-plane-wave least-squares reverse time migration. *Geophysical Prospecting*, **2019**, 67, 2061-2084	1.9	5
61	A hybrid scheme for seismic modelling based on Galerkin method. *Geophysical Journal International*, **2011**, 186, 1165-1178	2.6	5

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57	3D simulation of seismic-wave propagation in fractured media using an integral method accommodating irregular geometries. *Geophysics*, **2018**, 83, WA121-WA136	3.1	5
56	Free-surface multiple attenuation for blended data. *Geophysics*, **2016**, 81, V227-V233	3.1	4
55	Fast image-domain target-oriented least-squares reverse time migration. *Geophysics*, **2018**, 83, A81-A86	3.1	4
54	Frequency-dependent AVO analysis based on scattering series **2017**,		4
53	Pre-stack Trans-dimensional Seismic Inversion **2015**,		4
52	A practical approach to mode-converted shear wave velocity analysis from 3C data **2010**,		4
51	Azimuthal reflectivity and quantitative evaluation of anisotropic parameters from seismic data: a feasibility study **2005**,		4
50	Fast double plane wave full-waveform inversion using the scattering-integral method in frequency domain **2017**,		4
49	Density inversion from seismic using a trans-dimensional approach: A field dataset example **2019**,		4
48	Physics-guided deep autoencoder to overcome the need for a starting model in full-waveform inversion. *The Leading Edge*, **2022**, 41, 375-381	1	4
47	A hybrid Galerkin finite element method for seismic wave propagation in fractured media. *Geophysical Journal International*, **2020**, 221, 857-878	2.6	3
46	Joint inversion of PP and PS AVAZ data to estimate the fluid indicator in HTI medium: a case study in Western Sichuan Basin, China. *Journal of Geophysics and Engineering*, **2016**, 13, 690-703	1.3	3
45	Genetic Algorithm with Applications in Geophysics. *Springer Geophysics*, **2018**, 487-533	0.6	3
44	Global 3D acoustic Full Waveform Inversion using sparse model parameterization **2017**,		3
43	Suppressing non-Gaussian noises with scaled receiver wavefield for reverse-time migration: comparison of different approaches. *Geophysical Prospecting*, **2013**, 61, 761-770	1.9	3

42	Prestack PP & PS wave joint stochastic inversion in the same PP time scale **2011**,		3
41	Seismic indicators of gas hydrates and associated free gas **2009**,		3
40	Using time-lapse seismic amplitude data to detect variations of pore pressure and fluid saturation due to oil displacement by water: a numerical study based on one-dimensional prestack inversion. *Journal of Geophysics and Engineering*, **2006**, 3, 177-193	1.3	3
39	Prestack inversion of a Gulf of Thailand (OBC) data set. *Geophysics*, **2004**, 69, 1470-1477	3.1	3
38	Optimal parameter and uncertainty estimation of a land surface model: Sensitivity to parameter ranges and model complexities. *Advances in Atmospheric Sciences*, **2005**, 22, 142-157	2.9	3
37	Multifrequency beam-based migration in inhomogeneous media using windowed Fourier transform frames. *Geophysical Journal International*, **2020**, 223, 1086-1099	2.6	3
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35	A hybrid optimization method for full-waveform inversion **2021**,		3
34	Lithospheric Removal Beneath the Eastern Flank of the Rio Grande Rift From Receiver Function Velocity Analysis. *Geochemistry, Geophysics, Geosystems*, **2019**, 20, 974-991	3.6	2
33	Frequency-dependent AVO analysis. *The Leading Edge*, **2020**, 39, 84-91	1	2
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30	Full waveform seismic inversion using a distributed system of computers. *Concurrency Computation Practice and Experience*, **2005**, 17, 1365-1385	1.4	2
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28	Joint inversion of time-lapse seismic and production data using VFSA with local thermal regulation and pilot point parameterization **2009**,		2
27	Seismic inversion for splay fault interpretation in the Nankai Trough accretionary wedge, Japan **2010**,		2
26	A fast algorithm for computing the response from multiple fluid-filled fractures **2018**,		2
25	A new frequency-dependent reflectivity model and estimating seismic AVO attributes **2018**,		2

24	A multi-scale full waveform inversion method - staging wavenumber components and layer-stripping **2019**,		2
23	Two-step velocity inversion using trans-dimensional tomography and elastic FWI **2020**,		2
22	Assessing model uncertainty for the scaling function inversion of potential fields. *Geophysics*, **2021**, 86, G89-G98	3.1	2
21	Numerical modeling of seismic-wave propagation through fractures with nonuniform height and densityin 3d **2016**,		1
20	Utilizing Reciprocity Principle for Double Plane Wave Dataset and Imaging **2015**,		1
19	Comparisons between the hybrid ABC and the PML method for 2D high-order finite-difference acoustic modeling **2011**,		1
18	A new stochastic inference method for inversion of pre-stack seismic data **2011**,		1
17	Effective medium modeling of fluid-filled fractured-porous medium **2011**,		1
16	Assessing the value of time-lapse seismic data in joint inversion for reservoir parameter estimation in an oil reservoir subjected to water flooding recovery: A synthetic example **2009**,		1
15	Porosity estimation from seismic data at Dickman Field, Kansas for carbon sequestration **2010**,		1
14	Depth migration anisotropy analysis in the time domain. *Geophysical Prospecting*, **2007**, 56, 071106212522001-???	1.29	??
13	Implication from the aftershocks of the 1989 Loma Prieta Earthquake. *Geophysical Research Letters*, **1990**, 17, 1421-1424	4.9	1
12	Estimation of the fluid indicator from azimuthal AVO gradient variations at a fractured reservoir **2007**,		1
11	Plane-wave Gaussian-beam prestack depth migration **2007**,		1
10	Deep learning with cross-shape deep Boltzmann machine for pre-stack inversion problem **2019**,		1
9	A phase-space beam summation imaging in inhomogeneous medium **2019**,		1
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6	A time domain seismic imaging method with a sparse pulsed-beams data. *IEEE Transactions on Geoscience and Remote Sensing*, **2021**, 1-1	8.1	0
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