Mrinal K Sen

List of Publications by Year in Descending Order

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	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
148	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
147	Minibatch least-squares reverse time migration in a deep-learning framework. *Geophysics*, **2021**, 86, S125-S142	3.1	7
146	Frequency-dependent AVO analysis: A potential seismic attribute for thin-bed identification. *Geophysics*, **2021**, 86, N1-N17	3.1	8
145	Assessing model uncertainty for the scaling function inversion of potential fields. *Geophysics*, **2021**, 86, G89-G98	3.1	2
144	A hybrid optimization method for full-waveform inversion **2021**,		3
143	A gradient-based Markov chain Monte Carlo method for full-waveform inversion and uncertainty analysis. *Geophysics*, **2021**, 86, R15-R30	3.1	6
142	Frequency-dependent AVO analysis. *The Leading Edge*, **2020**, 39, 84-91	1	2
141	A hybrid Galerkin finite element method for seismic wave propagation in fractured media. *Geophysical Journal International*, **2020**, 221, 857-878	2.6	3
140	Probabilistic joint-inversion of marine CSEM and seismic traveltime data using VFSA and generalized fuzzy clustering **2020**,		1
139	Two-step velocity inversion using trans-dimensional tomography and elastic FWI **2020**,		2
138	Frequency-dependent AVO analysis using the scattering response of a layered reservoir. *Geophysics* , **2020**, 85, N1-N16	3.1	7
137	A fast image domain least squares migration method with local data target approach **2020**,		1
136	Multifrequency beam-based migration in inhomogeneous media using windowed Fourier transform frames. *Geophysical Journal International*, **2020**, 223, 1086-1099	2.6	3
135	Inversion of downhole electrical measurements for proppant mapping using very fast simulated annealing. *Geophysics*, **2020**, 85, D13-D22	3.1	
134	Prestack and poststack inversion using a physics-guided convolutional neural network. *Interpretation*, **2019**, 7, SE161-SE174	1.4	75
133	Full-waveform inversion of salt models using shape optimization and simulated annealing. *Geophysics*, **2019**, 84, R793-R804	3.1	7

132	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
131	Frequency-domain double-plane-wave least-squares reverse time migration. *Geophysical Prospecting*, **2019**, 67, 2061-2084	1.9	5
130	Least-squares path-summation diffraction imaging using sparsity constraints. *Geophysics*, **2019**, 84, S187-S200	3.1	13
129	Fast 2D full-waveform modeling and inversion using the Schur complement approach. *Geophysics*, **2019**, 84, R783-R792	3.1	2
128	Unsupervised physics-based neural networks for seismic migration. *Interpretation*, **2019**, 7, SE189-SE200	1.4	9
127	A Boltzmann machine for high-resolution prestack seismic inversion. *Interpretation*, **2019**, 7, SE215-SE224	1.4	6
126	Density inversion from seismic using a trans-dimensional approach: A field dataset example **2019**,		4
125	Deep learning with cross-shape deep Boltzmann machine for pre-stack inversion problem **2019**,		1
124	A multi-scale full waveform inversion method - staging wavenumber components and layer-stripping **2019**,		2
123	A phase-space beam summation imaging in inhomogeneous medium **2019**,		1
122	Pre-stack inversion using a physics-guided convolutional neural network **2019**,		7
121	A gradient based MCMC method for FWI and uncertainty analysis **2019**,		8
120	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
119	Deep crustal seismic reflection images from the Dharwar craton, Southern India: Evidence for the Neoarchean subduction. *Geophysical Journal International*, **2018**, 212, 777-794	2.6	19
118	Fast image-domain target-oriented least-squares reverse time migration. *Geophysics*, **2018**, 83, A81-A86	3.1	4
117	Genetic Algorithm with Applications in Geophysics. *Springer Geophysics*, **2018**, 487-533	0.6	3
116	A fast algorithm for computing the response from multiple fluid-filled fractures **2018**,		2
115	Hopfield networks for high-resolution prestack seismic inversion **2018**,		5

114	A new frequency-dependent reflectivity model and estimating seismic AVO attributes **2018**,		2
113	A new Fourier azimuthal amplitude variation fracture characterization method: Case study in the Haynesville Shale. *Geophysics*, **2018**, 83, WA101-WA120	3.1	9
112	Gravity inversion by the Multi-HOmogeneity Depth Estimation method for investigating salt domes and complex sources. *Geophysical Prospecting*, **2018**, 66, 175-191	1.9	7
111	3D simulation of seismic-wave propagation in fractured media using an integral method accommodating irregular geometries. *Geophysics*, **2018**, 83, WA121-WA136	3.1	5
110	Modeling of Low-Frequency Downhole Electrical Measurements for Mapping Proppant Distribution in Hydraulic Fractures in Casedhole Wells. *SPE Journal*, **2018**, 23, 2147-2157	3.1	3
109	An improved hybrid absorbing boundary condition for wave equation modeling. *Journal of Geophysics and Engineering*, **2018**, 15, 2602-2613	1.3	11
108	Double plane-wave reverse-time migration. *Geophysical Prospecting*, **2017**, 65, 1541-1558	1.9	8
107	Least-squares reverse time migration in elastic media. *Geophysical Journal International*, **2017**, 208, 1103-1125	2.1	57
106	Time-space-domain mesh-free finite difference based on least squares for 2D acoustic-wave modeling. *Geophysics*, **2017**, 82, T143-T157	3.1	20
105	Transdimensional seismic inversion using the reversible jump Hamiltonian Monte Carlo algorithm. *Geophysics*, **2017**, 82, R119-R134	3.1	55
104	Reciprocity and double plane-wave migration. *Geophysics*, **2017**, 82, S453-S466	3.1	6
103	Frequency-dependent AVO analysis based on scattering series **2017**,		4
102	Global 3D acoustic Full Waveform Inversion using sparse model parameterization **2017**,		3
101	2D Full-Waveform Inversion and Uncertainty Estimation using the Reversible Jump Hamiltonian Monte Carlo **2017**,		19
100	Fast double plane wave full-waveform inversion using the scattering-integral method in frequency domain **2017**,		4
99	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
98	Double-plane-wave reverse time migration in the frequency domain. *Geophysics*, **2016**, 81, S367-S382	3.1	18
97	Numerical modeling of seismic-wave propagation through fractures with nonuniform height and densityin 3d **2016**,		1

96	Estimating a starting model for full-waveform inversion using a global optimization method. *Geophysics*, **2016**, 81, R211-R223	3.1	61
95	Elastic wave propagation in fractured media using the discontinuous Galerkin method. *Geophysics*, **2016**, 81, T163-T174	3.1	36
94	Shallow lithosphere-asthenosphere boundary beneath Cambay Rift Zone of India: Inferred presence of carbonated partial melt. *Journal of the Geological Society of India*, **2016**, 88, 401-406	1.3	12
93	Free-surface multiple attenuation for blended data. *Geophysics*, **2016**, 81, V227-V233	3.1	4
92	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
91	Choice of regularization weight in basis pursuit reflectivity inversion. *Journal of Geophysics and Engineering*, **2015**, 12, 70-79	1.3	16
90	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
89	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
88	Double Plane Wave Least Squares Reverse Time Migration **2015**,		7
87	Estimation of fracture weaknesses and fluid indictor from 3D seismic data in HTI Media: A case study in the Haynesville Shale **2015**,		2
86	Pre-stack Trans-dimensional Seismic Inversion **2015**,		4
85	Lithospheric structure of the Texas-Gulf of Mexico passive margin from surface wave dispersion and migrated Ps receiver functions. *Geochemistry, Geophysics, Geosystems*, **2015**, 16, 2221-2239	3.6	9
84	Utilizing Reciprocity Principle for Double Plane Wave Dataset and Imaging **2015**,		1
83	Time-lapse pre-stack seismic data registration and inversion for CO2 sequestration study at Cranfield. *Geophysical Prospecting*, **2014**, 62, 1028-1039	1.9	6
82	Time□pace 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
81	Global Optimization Methods in Geophysical Inversion **2013**,		188
80	A prestack basis pursuit seismic inversion. *Geophysics*, **2013**, 78, R1-R11	3.1	80
79	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

78	Time-lapse seismic data registration and inversion for CO2 sequestration study at Cranfield. *Geophysics*, **2013**, 78, B329-B338	3.1	16
77	A hybrid absorbing boundary condition for elastic staggered-grid modelling. *Geophysical Prospecting*, **2012**, 60, 1114-1132	1.9	24
76	Shallow splay fault properties of the Nankai Trough accretionary wedge inferred from seismic inversion. *Journal of Geophysics and Engineering*, **2012**, 9, 1-11	1.3	5
75	Predicting subsurface CO2 movement: From laboratory to field scale. *Geophysics*, **2012**, 77, M27-M37	3.1	17
74	Comparisons between the hybrid ABC and the PML method for 2D high-order finite-difference acoustic modeling **2011**,		1
73	A new stochastic inference method for inversion of pre-stack seismic data **2011**,		1
72	A hybrid scheme for seismic modelling based on Galerkin method. *Geophysical Journal International*, **2011**, 186, 1165-1178	2.6	5
71	Effective medium modeling of fluid-filled fractured-porous medium **2011**,		1
70	Prestack PP & PS wave joint stochastic inversion in the same PP time scale **2011**,		3
69	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
68	Finite-difference modeling with adaptive variable-length spatial operators. *Geophysics*, **2011**, 76, T79-T89	3.1	60
67	Ray-Born inversion for fracture parameters. *Geophysical Journal International*, **2010**, 180, 1274-1288	2.6	9
66	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
65	Observation of shear-wave splitting in the multicomponent node data from Atlantis field, Gulf of Mexico. *Geophysical Prospecting*, **2010**, 58, 953	1.9	7
64	A hybrid scheme for absorbing edge reflections in numerical modeling of wave propagation. *Geophysics*, **2010**, 75, A1-A6	3.1	91
63	Acoustic VTI modeling with a time-space domain dispersion-relation-based finite-difference scheme. *Geophysics*, **2010**, 75, A11-A17	3.1	33
62	Porosity estimation from seismic data at Dickman Field, Kansas for carbon sequestration **2010**,		1
61	Simultaneous stochastic inversion of prestack seismic data using hybrid evolutionary algorithm **2010**,		6

60	A practical approach to mode-converted shear wave velocity analysis from 3C data **2010**,		4
59	Seismic inversion for splay fault interpretation in the Nankai Trough accretionary wedge, Japan **2010**,		2
58	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
57	Numerical modeling of wave equation by a truncated high-order finite-difference method. *Earthquake Science*, **2009**, 22, 205-213	1.5	11
56	An implicit staggered-grid finite-difference method for seismic modelling. *Geophysical Journal International*, **2009**, 179, 459-474	2.6	94
55	Seismic critical-angle anisotropy analysis in the □p domain. *Geophysics*, **2009**, 74, A53-A57	3.1	5
54	Seismic indicators of gas hydrates and associated free gas **2009**,		3
53	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
52	Joint inversion of time-lapse seismic and production data using VFSA with local thermal regulation and pilot point parameterization **2009**,		2
51	Seismic reflection coefficients of faults at low frequencies: a model study. *Geophysical Prospecting*, **2008**, 56, 287-292	1.9	7
50	The interior penalty discontinuous Galerkin method for elastic wave propagation: grid dispersion. *Geophysical Journal International*, **2008**, 175, 83-93	2.6	111
49	A possible mechanism for the spatial distribution of seismicity in northern Gulf of Mexico. *Geophysical Journal International*, **2008**, 175, 1141-1153	2.6	7
48	Finite-difference modelling of S-wave splitting in anisotropic media. *Geophysical Prospecting*, **2008**, 56, 293-312	1.9	55
47	Full waveform inversion of reflection seismic data for ocean temperature profiles. *Geophysical Research Letters*, **2008**, 35,	4.9	42
46	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
45	Depth migration anisotropy analysis in the time domain. *Geophysical Prospecting*, **2007**, 56, 071106212522001-???	1.9	??
44	Estimation of the fluid indicator from azimuthal AVO gradient variations at a fractured reservoir **2007**,		1
43	Plane-wave Gaussian-beam prestack depth migration **2007**,		1

42	Split-step Fourier migration of GPR data in lossy media. *Geophysics*, **2006**, 71, K77-K91	3.1	15
41	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
40	Plane-wave depth migration. *Geophysics*, **2006**, 71, S261-S272	3.1	40
39	Enforcing smoothness and assessing uncertainty in non-linear one-dimensional prestack seismic inversion. *Geophysical Prospecting*, **2006**, 54, 239-259	1.9	21
38	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
37	Autonomic oil reservoir optimization on the Grid. *Concurrency Computation Practice and Experience*, **2005**, 17, 1-26	1.4	26
36	Full waveform seismic inversion using a distributed system of computers. *Concurrency Computation Practice and Experience*, **2005**, 17, 1365-1385	1.4	2
35	A simulation and data analysis system for large-scale, data-driven oil reservoir simulation studies. *Concurrency Computation Practice and Experience*, **2005**, 17, 1441-1467	1.4	8
34	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
33	Joint inversion of first arrival seismic travel-time and gravity data. *Journal of Geophysics and Engineering*, **2005**, 2, 277-289	1.3	27
32	Azimuthal reflectivity and quantitative evaluation of anisotropic parameters from seismic data: a feasibility study **2005**,		4
31	Born integral, stationary phase and linearized reflection coefficients in weak anisotropic media. *Geophysical Journal International*, **2004**, 158, 225-238	2.6	82
30	Impacts of data length on optimal parameter and uncertainty estimation of a land surface model. *Journal of Geophysical Research*, **2004**, 109,		35
29	Vertical fracture detection by exploiting the polarization properties of ground-penetrating radar signals. *Geophysics*, **2004**, 69, 803-810	3.1	56
28	Prestack inversion of a Gulf of Thailand (OBC) data set. *Geophysics*, **2004**, 69, 1470-1477	3.1	3
27	Multidataset Study of Optimal Parameter and Uncertainty Estimation of a Land Surface Model with Bayesian Stochastic Inversion and Multicriteria Method. *Journal of Applied Meteorology and Climatology*, **2004**, 43, 1477-1497		9
26	EFFECT OF FORCING DATA ERRORS ON CALIBRATION AND UNCERTAINTY ESTIMATES OF THE CHASM MODEL: A MULTI-DATASET STUDY. *World Scientific Series on Asia-Pacific Weather and Climate*, **2004**, 340-355		2
25	Computation of differential seismograms and iteration adaptive regularization in prestack waveform inversion. *Geophysics*, **2003**, 68, 2026-2039	3.1	79

24	Numerical and Field Investigations of GPR: Toward an Airborne GPR. *Subsurface Sensing Technologies and Applications*, **2003**, 4, 41-60		8
23	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
22	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
21	Seismic Waveform Inversion: Practical aspects and Application to field seismic data. *ASEG Extended Abstracts*, **2003**, 2003, 1-4	0.2	
20	Artificial neural networks for parameter estimation in geophysics. *Geophysical Prospecting*, **2000**, 48, 21-47	1.9	82
19	Dip selective 2-D multiple attenuation in the plane-wave domain. *Geophysics*, **2000**, 65, 264-274	3.1	13
18	Seismic Inversion and Deconvolution: Dual-sensor Technology. *Eos*, **2000**, 81, 368	1.5	
17	Background velocity estimation using non-linear optimization for reflection tomography and migration misfit. *Geophysical Prospecting*, **1998**, 46, 51-78	1.9	19
16	Automatic NMO correction and velocity estimation by a feedforward neural network. *Geophysics*, **1998**, 63, 1696-1707	3.1	56
15	Hybrid optimization methods for geophysical inversion. *Geophysics*, **1997**, 62, 1196-1207	3.1	51
14	Hopfield neural networks, and mean field annealing for seismic deconvolution and multiple attenuation. *Geophysics*, **1997**, 62, 992-1002	3.1	26
13	Prestack migration velocity estimation using nonlinear methods. *Geophysics*, **1996**, 61, 138-150	3.1	28
12	Prestack plane-wave Kirchhoff migration in laterally varying media. *Geophysics*, **1996**, 61, 1068-1079	3.1	20
11	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
10	Bayesian inference, GibbsTsampler and uncertainty estimation in geophysical inversion1. *Geophysical Prospecting*, **1996**, 44, 313-350	1.9	212
9	Non-linear inversion of resistivity profiling data for some regular geometrical bodies1. *Geophysical Prospecting*, **1995**, 43, 979-1003	1.9	25
8	2-D migration velocity estimation using a genetic algorithm. *Geophysical Research Letters*, **1993**, 20, 1495-1498	4.9	10
7	Nonlinear inversion of resistivity sounding data. *Geophysics*, **1993**, 58, 496-507	3.1	60

6	Nonlinear one-dimensional seismic waveform inversion using simulated annealing. *Geophysics*, **1991** , 56, 1624-1638	3.1	341
5	Nonlinear multiparameter optimization using genetic algorithms: Inversion of plane-wave seismograms. *Geophysics*, **1991**, 56, 1794-1810	3.1	270
4	Implication from the aftershocks of the 1989 Loma Prieta Earthquake. *Geophysical Research Letters*, **1990**, 17, 1421-1424	4.9	1
3	Deep learning for velocity model building with common-image gather volumes. *Geophysical Journal International*,	2.6	7
2	Plane Wave Seismic Data: Parallel and Adaptive Strategies for Velocity Analysis and Imaging45-63		
1	Data-Directed Importance Sampling for Climate Model Parameter Uncertainty Estimation65-78		