

# Guillaume Caumon

## List of Publications by Year in descending order

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83  
papers

2,338  
citations

218677

26  
h-index

233421

45  
g-index

93  
all docs

93  
docs citations

93  
times ranked

1378  
citing authors

#	ARTICLE	IF	CITATIONS
1	Surface-Based 3D Modeling of Geological Structures. <i>Mathematical Geosciences</i> , 2009, 41, 927-945.	2.4	315
2	Building realistic structure models to train convolutional neural networks for seismic structural interpretation. <i>Geophysics</i> , 2020, 85, WA27-WA39.	2.6	130
3	Dynamic data integration for structural modeling: model screening approach using a distance-based model parameterization. <i>Computational Geosciences</i> , 2008, 12, 105-119.	2.4	112
4	3-D Structural geological models: Concepts, methods, and uncertainties. <i>Advances in Geophysics</i> , 2018, 1-121.	2.8	112
5	Concurrent number cruncher: a GPU implementation of a general sparse linear solver. <i>International Journal of Parallel, Emergent and Distributed Systems</i> , 2009, 24, 205-223.	1.0	98
6	Three-Dimensional Implicit Stratigraphic Model Building From Remote Sensing Data on Tetrahedral Meshes: Theory and Application to a Regional Model of La Popa Basin, NE Mexico. <i>IEEE Transactions on Geoscience and Remote Sensing</i> , 2013, 51, 1613-1621.	6.3	91
7	Building and Editing a Sealed Geological Model. <i>Mathematical Geosciences</i> , 2004, 36, 405-424.	0.9	77
8	Method for Stochastic Inverse Modeling of Fault Geometry and Connectivity Using Flow Data. <i>Mathematical Geosciences</i> , 2012, 44, 147-168.	2.4	67
9	Towards Stochastic Time-Varying Geological Modeling. <i>Mathematical Geosciences</i> , 2010, 42, 555-569.	2.4	63
10	Stochastic simulations of fault networks in 3D structural modeling. <i>Comptes Rendus - Geoscience</i> , 2010, 342, 687-694.	1.2	61
11	Balanced restoration of geological volumes with relaxed meshing constraints. <i>Computers and Geosciences</i> , 2010, 36, 441-452.	4.2	52
12	Adjacent versus coincident representations of geospatial uncertainty: Which promote better decisions?. <i>Computers and Geosciences</i> , 2011, 37, 511-520.	4.2	47
13	Curvature Attribute from Surface-Restoration as Predictor Variable in Kupferschiefer Copper Potentials. <i>Natural Resources Research</i> , 2015, 24, 275-290.	4.7	47
14	A parametric method to model 3D displacements around faults with volumetric vector fields. <i>Tectonophysics</i> , 2013, 590, 83-93.	2.2	46
15	3D geomodelling combining implicit surfaces and Voronoi-based remeshing: A case study in the Lorraine Coal Basin (France). <i>Computers and Geosciences</i> , 2015, 77, 29-43.	4.2	46
16	Voronoi grids conforming to 3D structural features. <i>Computational Geosciences</i> , 2014, 18, 373-383.	2.4	45
17	Concurrent Number Cruncher: An Efficient Sparse Linear Solver on the GPU. <i>Lecture Notes in Computer Science</i> , 2007, , 358-371.	1.3	45
18	Stochastic structural modelling in sparse data situations. <i>Petroleum Geoscience</i> , 2015, 21, 233-247.	1.5	44

#	ARTICLE	IF	CITATIONS
19	Implicit modeling of folds and overprinting deformation. Earth and Planetary Science Letters, 2016, 456, 26-38.	4.4	44
20	Automatic surface remeshing of 3D structural models at specified resolution: A method based on Voronoi diagrams. Computers and Geosciences, 2014, 62, 103-116.	4.2	40
21	Elements for measuring the complexity of 3D structural models: Connectivity and geometry. Computers and Geosciences, 2015, 76, 130-140.	4.2	33
22	Management of ambiguities in magnetostratigraphic correlation. Earth and Planetary Science Letters, 2013, 371-372, 26-36.	4.4	32
23	Structural data constraints for implicit modeling of folds. Journal of Structural Geology, 2017, 104, 80-92.	2.3	32
24	ODSIM: An Object-Distance Simulation Method for Conditioning Complex Natural Structures. Mathematical Geosciences, 2010, 42, 911-924.	2.4	29
25	RINGMesh: A programming library for developing mesh-based geomodeling applications. Computers and Geosciences, 2017, 104, 93-100.	4.2	29
26	Implicit Structural Modeling by Minimization of the Bending Energy with Moving Least Squares Functions. Mathematical Geosciences, 2019, 51, 693-724.	2.4	29
27	A methodology for pseudo-genetic stochastic modeling of discrete fracture networks. Computers and Geosciences, 2013, 56, 12-22.	4.2	28
28	Damage zone characterization combining scan-line and scan-area analysis on a km-scale Digital Outcrop Model: The Qala Fault (Gozo). Journal of Structural Geology, 2020, 140, 104144.	2.3	27
29	Uncertainty assessment in the stratigraphic well correlation of a carbonate ramp: Method and application to the Beausset Basin, SE France. Comptes Rendus - Geoscience, 2016, 348, 499-509.	1.2	24
30	Impact of a stochastic sequential initiation of fractures on the spatial correlations and connectivity of discrete fracture networks. Journal of Geophysical Research: Solid Earth, 2016, 121, 5641-5658.	3.4	24
31	Modeling Channel Forms and Related Sedimentary Objects Using a Boundary Representation Based on Non-uniform Rational B-Splines. Mathematical Geosciences, 2016, 48, 259-284.	2.4	23
32	Simultaneous multiple well-seismic ties using flattened synthetic and real seismograms. Geophysics, 2017, 82, IM13-IM20.	2.6	22
33	Sampling the uncertainty associated with segmented normal fault interpretation using a stochastic downscaling method. Tectonophysics, 2015, 639, 56-67.	2.2	20
34	Interactive editing of 3D geological structures and tectonic history sketching via a rigid element method. Computers and Geosciences, 2015, 74, 71-86.	4.2	17
35	Indirect unstructured hex-dominant mesh generation using tetrahedra recombination. Computational Geosciences, 2016, 20, 437-451.	2.4	17
36	Automatic correction and simplification of geological maps and cross-sections for numerical simulations. Comptes Rendus - Geoscience, 2019, 351, 48-58.	1.2	17

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37	Visualization of grids conforming to geological structures: a topological approach. Computers and Geosciences, 2005, 31, 671-680.	4.2	16
38	A parametric fault displacement model to introduce kinematic control into modeling faults from sparse data. Interpretation, 2018, 6, B1-B13.	1.1	16
39	Understanding the evolution of syn-depositional folds: Coupling decompaction and 3D sequential restoration. Marine and Petroleum Geology, 2011, 28, 1530-1539.	3.3	15
40	Finite Difference Implicit Structural Modeling of Geological Structures. Mathematical Geosciences, 2021, 53, 785-808.	2.4	15
41	Handling natural complexity in three-dimensional geomechanical restoration, with application to the recent evolution of the outer fold and thrust belt, deep-water Niger Delta. AAPG Bulletin, 2013, 97, 87-102.	1.5	14
42	Reconstruction of Channelized Systems Through a Conditioned Reverse Migration Method. Mathematical Geosciences, 2017, 49, 965-994.	2.4	14
43	Uncertainty management in stratigraphic well correlation and stratigraphic architectures: A training-based method. Computers and Geosciences, 2018, 111, 1-17.	4.2	14
44	Validating novel boundary conditions for three-dimensional mechanics-based restoration: An extensional sandbox model example. AAPG Bulletin, 2018, 102, 245-266.	1.5	14
45	Relevance of the stochastic stratigraphic well correlation approach for the study of complex carbonate settings: application to the Malampaya buildup (Offshore Palawan, Philippines). Geological Society Special Publication, 2012, 370, 265-275.	1.3	13
46	Combined inverse and forward numerical modelling for reconstruction of channel evolution and facies distributions in fluvial meander-belt deposits. Marine and Petroleum Geology, 2020, 117, 104409.	3.3	13
47	Reservoir flow uncertainty assessment using response surface constrained by secondary information. Journal of Petroleum Science and Engineering, 2008, 60, 170-182.	4.2	12
48	3D modeling from outcrop data in a salt tectonic context: Example from the Inceyol minibasin, Sivas Basin, Turkey. Interpretation, 2016, 4, SM17-SM31.	1.1	12
49	Structural Interpretation of Sparse Fault Data Using Graph Theory and Geological Rules. Mathematical Geosciences, 2019, 51, 1091-1107.	2.4	12
50	Stochastic simulation of fault networks from 2D seismic lines. , 2010, , .		11
51	Toward Mixed-element Meshing based on Restricted Voronoi Diagrams. Procedia Engineering, 2014, 82, 279-290.	1.2	10
52	Ensemble-based multi-scale history-matching using second-generation wavelet transform. Computational Geosciences, 2015, 19, 999-1025.	2.4	10
53	3D geometrical modelling of post-foliation deformations in metamorphic terrains (Syros, Cyclades,) Tj ETQq1 1 0.784314 rgBT /Overl	2.3	8
54	Semiautomatic interpretation of 3D sedimentological structures on geologic images: An object-based approach. Interpretation, 2015, 3, SX63-SX74.	1.1	8

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55	Oil production uncertainty assessment by predicting reservoir production curves and confidence intervals from arbitrary proxy responses. <i>Journal of Petroleum Science and Engineering</i> , 2019, 176, 116-125.	4.2	8
56	Impact of the en echelon fault connectivity on reservoir flow simulations. <i>Interpretation</i> , 2015, 3, SAC23-SAC34.	1.1	7
57	Generating variable shapes of salt geobodies from seismic images and prior geological knowledge. <i>Interpretation</i> , 2019, 7, T829-T841.	1.1	7
58	Direct simulation of non-additive properties on unstructured grids. <i>Advances in Water Resources</i> , 2020, 143, 103665.	3.8	7
59	GPU Accelerated Isosurface Extraction on Tetrahedral Grids. <i>Lecture Notes in Computer Science</i> , 2006, , 383-392.	1.3	7
60	Modelling of faults in LoopStructural 1.0. <i>Geoscientific Model Development</i> , 2021, 14, 6197-6213.	3.6	7
61	Spatial Constraints for the Stochastic Modeling of Fault Networks in the Presence of Large Structural Uncertainties. , 2013, , .		6
62	Special Issue on Three-Dimensional Structural Modeling. <i>Mathematical Geosciences</i> , 2014, 46, 905-908.	2.4	5
63	Introduction to special section: Building complex and realistic geological models from sparse data. <i>Interpretation</i> , 2016, 4, SMi-SMi.	1.1	5
64	Parametric unfolding of flexural folds using palaeomagnetic vectors. <i>Geological Society Special Publication</i> , 2016, 425, 247-258.	1.3	5
65	Multi-scenario Interpretations From Sparse Fault Evidence Using Graph Theory and Geological Rules. <i>Journal of Geophysical Research: Solid Earth</i> , 2021, 126, e2020JB020022.	3.4	5
66	Towards the application of Stokes flow equations to structural restoration simulations. <i>Solid Earth</i> , 2020, 11, 1909-1930.	2.8	5
67	Computer-assisted stochastic multi-well correlation: Sedimentary facies versus well distality. <i>Marine and Petroleum Geology</i> , 2022, 135, 105371.	3.3	5
68	Geological Objects and Physical Parameter Fields in the Subsurface: A Review. , 2018, , 567-588.		4
69	Impacts of geometric model simplifications on wave propagation application to ground motion simulation in the lower Var valley basin (France). <i>Geophysical Journal International</i> , 2021, 229, 110-137.	2.4	4
70	Finite Element Implicit 3D Subsurface Structural Modeling. <i>CAD Computer Aided Design</i> , 2022, 149, 103267.	2.7	4
71	Appraising structural interpretations using seismic data Theoretical elements. <i>Geophysics</i> , 2019, 84, N29-N40.	2.6	2
72	Simultaneous multiple well-seismic ties using flattened synthetic and real seismograms. , 2016, , .		2

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73	3D Stochastic Stratigraphic Well Correlation of Carbonate Ramp Systems. , 2009, , .		2
74	Assessing the Impact of Fault Connectivity Uncertainty in Reservoir Studies using Explicit Discretization. , 2011, , .		1
75	Integration of channel meander abandonment age uncertainty into a stochastic channelized system reconstruction method. <i>Geomorphology</i> , 2019, 345, 106824.	2.6	1
76	Modeling Channel Forms Using a Boundary Representation Based on Non-uniform Rational B-Splines. <i>Lecture Notes in Earth System Sciences</i> , 2014, , 581-584.	0.6	1
77	Testing scenarios on geological models: Local interface insertion in a 2D mesh and its impact on seismic wave simulation. <i>Computers and Geosciences</i> , 2022, 159, 105013.	4.2	1
78	Assessing Uncertainty in Stratigraphic Correlation: A Stochastic Method Based on Dynamic Time Warping. , 2014, , .		0
79	Seismic interpretation of fault-related deformation using a numerical kinematic model. , 2016, , .		0
80	Appraising structural models using seismic data: Problem and challenges. , 2017, , .		0
81	High Resolution Geostatistics on Coarse Unstructured Flow Grids. <i>Quantitative Geology and Geostatistics</i> , 2005, , 703-712.	0.1	0
82	New Perspectives for 3D Visualization of Dynamic Reservoir Uncertainty. , 2009, , .		0
83	Determination of a stress-dependent rock-physics model using anisotropic time-lapse tomographic inversion. <i>Geophysics</i> , 2020, 85, C141-C152.	2.6	0