Antonin Chambolle

List of Publications by Year
in descending order

137 papers	13,843 citations	81889 39 h-index	22829 112 g-index
138 all docs	138 docs citations	138 times ranked	6514 citing authors

#	Article	IF	Citations
1	A First-Order Primal-Dual Algorithm for Convex Problems with Applications to Imaging. Journal of Mathematical Imaging and Vision, 2011, 40, 120-145.	1.3	2,986
2	An Algorithm for Total Variation Minimization and Applications. Journal of Mathematical Imaging and Vision, 2004, 20, 89-97.	1.3	1,988
3	Image recovery via total variation minimization and related problems. Numerische Mathematik, 1997, 76, 167-188.	1.9	1,330
4	Nonlinear wavelet image processing: variational problems, compression, and noise removal through wavelet shrinkage. IEEE Transactions on Image Processing, 1998, 7, 319-335.	9.8	659
5	A Fast Spectral Method for Active 3D Shape Reconstruction. Journal of Mathematical Imaging and Vision, 2004, 20, 73-87.	1.3	591
6	An introduction to continuous optimization for imaging. Acta Numerica, 2016, 25, 161-319.	10.7	331
7	Dual Norms and Image Decomposition Models. International Journal of Computer Vision, 2005, 63, 85-104.	15.6	287
8	Design-dependent loads in topology optimization. ESAIM - Control, Optimisation and Calculus of Variations, 2003, 9, 19-48.	1.3	276
9	Image Decomposition into a Bounded Variation Component and an Oscillating Component. Journal of Mathematical Imaging and Vision, 2005, 22, 71-88.	1.3	270
10	On the ergodic convergence rates of a first-order primal–dual algorithm. Mathematical Programming, 2016, 159, 253-287.	2.4	253
11	On the Convergence of the Iterates of the "Fast Iterative Shrinkage/Thresholding Algorithm" Journal of Optimization Theory and Applications, 2015, 166, 968-982.	1.5	248
12	Diagonal preconditioning for first order primal-dual algorithms in convex optimization. , 2011, , .		228
13	Total Variation Minimization and a Class of Binary MRF Models. Lecture Notes in Computer Science, 2005, , 136-152.	1.3	198
14	An algorithm for minimizing the Mumford-Shah functional. , 2009, , .		196
15	An Introduction to Total Variation for Image Analysis. Radon Series on Computational and Applied Mathematics, 2010, , 263-340.	0.4	192
16	Image Segmentation by Variational Methods: Mumford and Shah Functional and the Discrete Approximations. SIAM Journal on Applied Mathematics, 1995, 55, 827-863.	1.8	169
17	A convex relaxation approach for computing minimal partitions. , 2009, , .		165
18	Existence of Weak Solutions for the Unsteady Interaction of a Viscous Fluid with an Elastic Plate. Journal of Mathematical Fluid Mechanics, 2005, 7, 368-404.	1.0	160

#	ARTICLE	IF	CITATIONS
19	Practical, Unified, Motion and Missing Data Treatment in Degraded Video. Journal of Mathematical Imaging and Vision, 2004, 20, 163-177.	1.3	135
20	A Convex Approach to Minimal Partitions. SIAM Journal on Imaging Sciences, 2012, 5, 1113-1158.	2.2	133
21	Global Solutions of Variational Models with Convex Regularization. SIAM Journal on Imaging Sciences, 2010, 3, 1122-1145.	2.2	124
22	An approximation result for special functions with bounded deformation. Journal Des Mathematiques Pures Et Appliquees, 2004, 83, 929-954.	1.6	116
23	Implementation of an adaptive finite-element approximation of the Mumford-Shah functional. Numerische Mathematik, 2000, 85, 609-646.	1.9	112
24	On Total Variation Minimization and Surface Evolution Using Parametric Maximum Flows. International Journal of Computer Vision, 2009, 84, 288-307.	15.6	110
25	A Density Result in Two-Dimensional Linearized Elasticity, and Applications. Archive for Rational Mechanics and Analysis, 2003, 167, 211-233.	2.4	107
26	The Discontinuity Set of Solutions of the TV Denoising Problem and Some Extensions. Multiscale Modeling and Simulation, 2007, 6, 879-894.	1.6	106
27	When and how do cracks propagate?. Journal of the Mechanics and Physics of Solids, 2009, 57, 1614-1622.	4.8	98
28	Finite-differences discretizations of the mumford-shah functional. ESAIM: Mathematical Modelling and Numerical Analysis, 1999, 33, 261-288.	1.9	97
29	A characterization of convex calibrable sets in. Mathematische Annalen, 2005, 332, 329-366.	1.4	97
30	An algorithm for Mean Curvature Motion. Interfaces and Free Boundaries, 2004, 6, 195-218.	0.8	86
31	Stochastic Primal-Dual Hybrid Gradient Algorithm with Arbitrary Sampling and Imaging Applications. SIAM Journal on Optimization, 2018, 28, 2783-2808.	2.0	76
32	A l 1-Unified Variational Framework for Image Restoration. Lecture Notes in Computer Science, 2004, , 1-13.	1.3	63
33	Discrete approximation of the Mumford-Shah functional in dimension two. ESAIM: Mathematical Modelling and Numerical Analysis, 1999, 33, 651-672.	1.9	58
34	Crack Initiation in Brittle Materials. Archive for Rational Mechanics and Analysis, 2008, 188, 309-349.	2.4	57
35	Nonlocal Curvature Flows. Archive for Rational Mechanics and Analysis, 2015, 218, 1263-1329.	2.4	52
36	Crystalline Mean Curvature Flow of Convex Sets. Archive for Rational Mechanics and Analysis, 2006, 179, 109-152.	2.4	50

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37	On Representer Theorems and Convex Regularization. SIAM Journal on Optimization, 2019, 29, 1260-1281.	2.0	48
38	Partial differential equations and image processing. , 0, , .		47
39	An Upwind Finite-Difference Method for Total Variationâ€"Based Image Smoothing. SIAM Journal on Imaging Sciences, 2011, 4, 277-299.	2.2	47
40	Evolution of characteristic functions of convex sets in the plane by the minimizing total variation flow. Interfaces and Free Boundaries, 2005, 7, 29-53.	0.8	46
41	Interpreting translation-invariant wavelet shrinkage as a new image smoothing scale space. IEEE Transactions on Image Processing, 2001, 10, 993-1000.	9.8	44
42	Computing the Equilibrium Configuration of Epitaxially Strained Crystalline Films. SIAM Journal on Applied Mathematics, 2002, 62, 1093-1121.	1.8	43
43	A HÃ¶lder infinity Laplacian. ESAIM - Control, Optimisation and Calculus of Variations, 2012, 18, 799-835.	1.3	41
44	Continuity of neumann linear elliptic problems on varying twoâ€"dimensional bounded open sets. Communications in Partial Differential Equations, 1997, 22, 811-840.	2.2	40
45	Image Decomposition Application to SAR Images. Lecture Notes in Computer Science, 2003, , 297-312.	1.3	38
46	Addendum to â€œAn approximation result for special functions with bounded deformationâ€•[J. Math. Pures Appl. (9) 83 (7) (2004) 929â€"954]: the N-dimensional case. Journal Des Mathematiques Pures Et Appliquees, 2005, 84, 137-145.	1.6	37
47	Revisiting Energy Release Rates in Brittle Fracture. Journal of Nonlinear Science, 2010, 20, 395-424.	2.1	37
48	A Density Result in GSBDp with Applications to the Approximation of Brittle Fracture Energies. Archive for Rational Mechanics and Analysis, 2019, 232, 1329-1378.	2.4	37
49	Uniqueness of the Cheeger set of a convex body. Pacific Journal of Mathematics, 2007, 232, 77-90.	0.5	37
50	Anisotropic curvature-driven flow of convex sets. Nonlinear Analysis: Theory, Methods & Applications, 2006, 65, 1547-1577.	1.1	36
51	Geometric properties of solutions to the total variation denoising problem. Inverse Problems, 2017, 33, 015002.	2.0	35
52	A remark on accelerated block coordinate descent for computing the proximity operators of a sum of convex functions. SMAI Journal of Computational Mathematics, 0, 1, 29-54.	0.0	35
53	Regularity for solutions of the total variation denoising problem. Revista Matematica Iberoamericana, 2011, 27, 233-252.	0.9	33
54	Piecewise rigidity. Journal of Functional Analysis, 2007, 244, 134-153.	1.4	32

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55	Korn-Poincare inequalities for functions with a small jump set. Indiana University Mathematics Journal, 2016, 65, 1373-1399.	0.9	31
56	Approximation of a Brittle Fracture Energy with a Constraint of Non-interpenetration. Archive for Rational Mechanics and Analysis, 2018, 228, 867-889.	2.4	31
57	The Phase-Field Method in Optimal Design. , 2006, , 207-215.		28
58	A relaxation result for energies defined on pairs set-function and applications. ESAIM - Control, Optimisation and Calculus of Variations, 2007, 13, 717-734.	1.3	27
59	Inexact first-order primalâ€"dual algorithms. Computational Optimization and Applications, 2020, 76, 381-430.	1.6	26
60	Convergence of an Algorithm for the Anisotropic and Crystalline Mean Curvature Flow. SIAM Journal on Mathematical Analysis, 2006, 37, 1978-1987.	1.9	25
61	The volume preserving crystalline mean curvature flow of convex sets in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si1.gif" overflow="scroll"><mml:msup><mml:mi mathvariant="double-struck">R</mml:mi><mml:mi>N</mml:mi></mml:msup></mml:math>. Journal Des Mathematiques Pures Et Appliquees, 2009, 92, 499-527.	1.6	25
62	Some Remarks on Uniqueness and Regularity of Cheeger Sets. Rendiconti Del Seminario Matematico Dell 'Universita' Di Padova/Mathematical Journal of the University of Padova, 2010, 123, 191-201.	0.5	25
63	A convex representation for the vectorial Mumford-Shah functional. , 2012, , .		25
64	Total roto-translational variation. Numerische Mathematik, 2019, 142, 611-666.	1.9	25
65	Time-delay regularization of anisotropic diffusion and image processing. ESAIM: Mathematical Modelling and Numerical Analysis, 2005, 39, 231-251.	1.9	22
66	A Nonlocal Mean Curvature Flow and Its Semi-implicit Time-Discrete Approximation. SIAM Journal on Mathematical Analysis, 2012, 44, 4048-4077.	1.9	22
67	Continuous Matching via Vector Field Flow. Computer Graphics Forum, 2015, 34, 129-139.	3.0	21
68	C^infty regularity of the free boundary for a two-dimensional optimal compliance problem. Calculus of Variations and Partial Differential Equations, 2003, 18, 77-94.	1.7	20
69	Interaction of a Bulk and a Surface Energy with a Geometrical Constraint. SIAM Journal on Mathematical Analysis, 2007, 39, 77-102.	1.9	20
70	A characterization of convex calibrable sets in (R^{N}) with respect to anisotropic norms. Annales De L'Institut Henri Poincare (C) Analyse Non Lineaire, 2008, 25, 803-832.	1.4	19
71	Approximation of functions with small jump sets and existence of strong minimizers of Griffith's energy. Journal Des Mathematiques Pures Et Appliquees, 2019, 128, 119-139.	1.6	19
72	Continuous limits of discrete perimeters. ESAIM: Mathematical Modelling and Numerical Analysis, 2010, 44, 207-230.	1.9	18

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73	Convex Relaxation of Vectorial Problems with Coupled Regularization. SIAM Journal on Imaging Sciences, 2014, 7, 294-336.	2.2	18
74	Backtracking Strategies for Accelerated Descent Methods with Smooth Composite Objectives. SIAM Journal on Optimization, 2019, 29, 1772-1798.	2.0	18
75	Supervised Descriptor Learning for Non-Rigid Shape Matching. Lecture Notes in Computer Science, 2015, , 283-298.	1.3	18
76	Homogenization of interfacial energies and construction of plane-like minimizers in periodic media through a cell problem. Networks and Heterogeneous Media, 2009, 4, 127-152.	1.1	18
77	Existence and Uniqueness for a Crystalline Mean Curvature Flow. Communications on Pure and Applied Mathematics, 2017, 70, 1084-1114.	3.1	17
78	Some results on anisotropic fractional mean curvature flows. Interfaces and Free Boundaries, 2017, 19, 393-415.	0.8	16
79	Crouzeixâ€"Raviart Approximation of the Total Variation on Simplicial Meshes. Journal of Mathematical Imaging and Vision, 2020, 62, 872-899.	1.3	16
80	Total Variation in Imaging. , 2015, , 1455-1499.		15
81	APPROXIMATION OF THE ANISOTROPIC MEAN CURVATURE FLOW. Mathematical Models and Methods in Applied Sciences, 2007, 17, 833-844.	3.3	14
82	ON THE GRADIENT FLOW OF A ONE-HOMOGENEOUS FUNCTIONAL. Confluentes Mathematici, 2011, 03, 617-635.	0.2	14
83	Consistency result for a non monotone scheme for anisotropic mean curvature flow. Interfaces and Free Boundaries, 2012, 14, 1-35.	0.8	14
84	A phase-field approximation of the Steiner problem in dimension two. Advances in Calculus of Variations, 2019, 12, 157-179.	1.2	14
85	Learning Consistent Discretizations of the Total Variation. SIAM Journal on Imaging Sciences, 2021, 14, 778-813.	2.2	14
86	Existence and uniqueness for anisotropic and crystalline mean curvature flows. Journal of the American Mathematical Society, 2019, 32, 779-824.	3.9	13
87	Total Variation in Imaging. , 2011, , 1016-1057.		13
88	A convex relaxation approach for computing minimal partitions. , 2009, , .		13
89	Existence of strong solutions to the Dirichlet problem for the Griffith energy. Calculus of Variations and Partial Differential Equations, 2019, 58, 1.	1.7	12
90	Control of the Wave Equation by Time-Dependent Coefficient. ESAIM - Control, Optimisation and Calculus of Variations, 2002, 8, 375-392.	1.3	11

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91	Approximating the total variation with finite differences or finite elements. Handbook of Numerical Analysis, 2021, 22, 383-417.	1.8	11
92	A remark on the anisotropic outer Minkowski content. Advances in Calculus of Variations, 2014, 7, .	1.2	10
93	Accelerated Alternating Descent Methods for Dykstra-Like Problems. Journal of Mathematical Imaging and Vision, 2017, 59, 481-497.	1.3	10
94	Nonlinear spectral decompositions by gradient flows of one-homogeneous functionals. Analysis and PDE, 2021, 14, 823-860.	1.4	10
95	Korn and Poincaré-Korn inequalities for functions with a small jump set. Mathematische Annalen, 0, , 1.	1.4	10
96	A uniqueness result in the theory of stereo vision: Coupling Shape from Shading and Binocular Information allows Unambiguous Depth Reconstruction. Annales De L'Institut Henri Poincare (C) Analyse Non Lineaire, 1994, 11, 1-16.	1.4	9
97	Mean curvature flow with obstacles. Annales De L'Institut Henri Poincare (C) Analyse Non Lineaire, 2012, 29, 667-681.	1.4	9
98	Mumford–Shah functionals on graphs and their asymptotics. Nonlinearity, 2020, 33, 3846-3888.	1.4	9
99	Minimizing movements of the Mumford and Shah energy. Discrete and Continuous Dynamical Systems, 1997, 3, 153-174.	0.9	8
100	Energy release rate for non-smooth cracks in planar elasticity. Journal De L'Ecole Polytechnique - Mathematiques, 0, 2, 117-152.	0.0	8
101	Image restoration by constrained total variation minimization and variants. , 1995, , .		7
102	Plane-Like Minimizers and Differentiability of the Stable Norm. Journal of Geometric Analysis, 2014, 24, 1447-1489.	1.0	7
103	Fine properties of the subdifferential for a class of one-homogeneous functionals. Advances in Calculus of Variations, 2015, 8, 31-42.	1.2	7
104	Generalized crystalline evolutions as limits of flows with smooth anisotropies. Analysis and PDE, 2019, 12, 789-813.	1.4	7
105	Phase-field approximation for a class of cohesive fracture energies with an activation threshold. Advances in Calculus of Variations, 2020, .	1.2	7
106	A posteriori error estimates for the effective Hamiltonian of dislocation dynamics. Numerische Mathematik, 2012, 121, 281-335.	1.9	6
107	The Γ-limit for singularly perturbed functionals of Perona–Malik type in arbitrary dimension. Mathematical Models and Methods in Applied Sciences, 2014, 24, 1091-1113.	3.3	6
108	Regularity for the Optimal Compliance Problem with Length Penalization. SIAM Journal on Mathematical Analysis, 2017, 49, 1166-1224.	1.9	6

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109	A Convex Variational Model for Learning Convolutional Image Atoms from Incomplete Data. Journal of Mathematical Imaging and Vision, 2020, 62, 417-444.	1.3	6
110	Total Variation Minimization and Graph Cuts for Moving Objects Segmentation. , 2007, , 743-753.		6
111	Minimizing movements and level set approaches to nonlocal variational geometric flows. , 2013, , 93-104.		6
112	Faster PET reconstruction with a stochastic primal-dual hybrid gradient method. , 2017, , .		6
113	Implicit time discretization of the mean curvature flow with a discontinuous forcing term. Interfaces and Free Boundaries, 2008, 10, 283-300.	0.8	6
114	The stress intensity factor for non-smooth fractures in antiplane elasticity. Calculus of Variations and Partial Differential Equations, 2013, 47, 589-610.	1.7	5
115	Existence and uniqueness for planar anisotropic and crystalline curvature flow. , 0, , .		5
116	Macroscopic contact angle and liquid drops on rough solid surfaces via homogenization and numerical simulations. ESAIM: Mathematical Modelling and Numerical Analysis, 2013, 47, 837-858.	1.9	4
117	Variational approximation of size-mass energies for k-dimensional currents. ESAIM - Control, Optimisation and Calculus of Variations, 2019, 25, 43.	1.3	4
118	Representation, relaxation and convexity for variational problems in Wiener spaces. Journal Des Mathematiques Pures Et Appliquees, 2013, 99, 419-435.	1.6	3
119	Adapted Basis for Nonlocal Reconstruction of Missing Spectrum. SIAM Journal on Imaging Sciences, 2014, 7, 1484-1502.	2.2	3
120	Total Variation Denoising and Support Localization of the Gradient. Journal of Physics: Conference Series, 2016, 756, 012007.	0.4	3
121	Pointwise Besov Space Smoothing of Images. Journal of Mathematical Imaging and Vision, 2019, 61, 1-20.	1.3	3
122	Strong approximation in h-mass of rectifiable currents under homological constraint. Advances in Calculus of Variations, 2021, 14, 343-363.	1.2	3
123	Classification and feature selection using a primal-dual method and projection on structured constraints. , 2021, , .		3
124	The Saturn Ring Effect in Nematic Liquid Crystals with External Field: Effective Energy and Hysteresis. Archive for Rational Mechanics and Analysis, 2021, 241, 1403-1457.	2.4	3
125	Un principe du maximum pour des opérateurs monotones. Comptes Rendus Mathematique, 1998, 326, 823-827.	0.5	2
126	Enhancement of Blurred and Noisy Images Based on an Original Variant of the Total Variation. Lecture Notes in Computer Science, 2009, , 368-376.	1.3	2

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127	Convergence of a Piggyback-Style Method for the Differentiation of Solutions of Standard Saddle-Point Problems. SIAM Journal on Mathematics of Data Science, 2022, 4, 1003-1030.	1.8	2
128	Total Variation in Imaging. , 2014, , 1-39.		1
129	Occlusion detection in dense stereo estimation with convex optimization. , 2017, , .		1
130	Preface to the Special Issue on Optimization for Data Sciences. Applied Mathematics and Optimization, 2020, 82, 889-890.	1.6	1
131	Anisotropic tubular neighborhoods of sets. Mathematische Zeitschrift, 0, , 1.	0.9	1
132	Minimizing movements for forced anisotropic mean curvature flow of partitions with mobilities. Proceedings of the Royal Society of Edinburgh Section A: Mathematics, 2021, 151, 1135-1170.	1.2	1
133	Error estimates for finite differences approximations of the total variation. IMA Journal of Numerical Analysis, 2023, 43, 692-736.	2.9	1
134	Guest Editorial: Variational Models, Convex Analysis and Numerical Optimization in Mathematical Imaging. Journal of Mathematical Imaging and Vision, 2013, 47, 165-166.	1.3	0
135	Properties of minimizers of the total variation and of the solutions of the total variation flow. , 2014, , .		0
136	Mathematical Imaging and Surface Processing. Oberwolfach Reports, 2016, 13, 155-214.	0.0	0
137	On the convergence rate of some nonlocal energies. Nonlinear Analysis: Theory, Methods & Applications, 2020, 200, 112016.	1.1	0