

# Antonin Chambolle

## List of Publications by Year in descending order

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137  
papers

13,843  
citations

93792

39  
h-index

25983

112  
g-index

138  
all docs

138  
docs citations

138  
times ranked

7520  
citing authors

#	ARTICLE	IF	CITATIONS
1	Error estimates for finite differences approximations of the total variation. IMA Journal of Numerical Analysis, 2023, 43, 692-736.	1.5	1
2	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.	1.0	2
3	Strong approximation in h-mass of rectifiable currents under homological constraint. Advances in Calculus of Variations, 2021, 14, 343-363.	0.7	3
4	Approximating the total variation with finite differences or finite elements. Handbook of Numerical Analysis, 2021, 22, 383-417.	0.9	11
5	Learning Consistent Discretizations of the Total Variation. SIAM Journal on Imaging Sciences, 2021, 14, 778-813.	1.3	14
6	Classification and feature selection using a primal-dual method and projection on structured constraints. , 2021, , .		3
7	Nonlinear spectral decompositions by gradient flows of one-homogeneous functionals. Analysis and PDE, 2021, 14, 823-860.	0.6	10
8	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.	1.1	3
9	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.	0.8	1
10	Preface to the Special Issue on Optimization for Data Sciences. Applied Mathematics and Optimization, 2020, 82, 889-890.	0.8	1
11	A Convex Variational Model for Learning Convolutional Image Atoms from Incomplete Data. Journal of Mathematical Imaging and Vision, 2020, 62, 417-444.	0.8	6
12	Mumford-Shah functionals on graphs and their asymptotics. Nonlinearity, 2020, 33, 3846-3888.	0.6	9
13	Phase-field approximation for a class of cohesive fracture energies with an activation threshold. Advances in Calculus of Variations, 2020, .	0.7	7
14	Crouzeix-Raviart Approximation of the Total Variation on Simplicial Meshes. Journal of Mathematical Imaging and Vision, 2020, 62, 872-899.	0.8	16
15	Inexact first-order primal-dual algorithms. Computational Optimization and Applications, 2020, 76, 381-430.	0.9	26
16	On the convergence rate of some nonlocal energies. Nonlinear Analysis: Theory, Methods & Applications, 2020, 200, 112016.	0.6	0
17	Pointwise Besov Space Smoothing of Images. Journal of Mathematical Imaging and Vision, 2019, 61, 1-20.	0.8	3
18	Existence of strong solutions to the Dirichlet problem for the Griffith energy. Calculus of Variations and Partial Differential Equations, 2019, 58, 1.	0.9	12

#	ARTICLE	IF	CITATIONS
19	Approximation of functions with small jump sets and existence of strong minimizers of Griffith's energy. <i>Journal Des Mathematiques Pures Et Appliquees</i> , 2019, 128, 119-139.	0.8	19
20	Backtracking Strategies for Accelerated Descent Methods with Smooth Composite Objectives. <i>SIAM Journal on Optimization</i> , 2019, 29, 1772-1798.	1.2	18
21	On Representer Theorems and Convex Regularization. <i>SIAM Journal on Optimization</i> , 2019, 29, 1260-1281.	1.2	48
22	Total roto-translational variation. <i>Numerische Mathematik</i> , 2019, 142, 611-666.	0.9	25
23	Generalized crystalline evolutions as limits of flows with smooth anisotropies. <i>Analysis and PDE</i> , 2019, 12, 789-813.	0.6	7
24	Existence and uniqueness for anisotropic and crystalline mean curvature flows. <i>Journal of the American Mathematical Society</i> , 2019, 32, 779-824.	1.9	13
25	A Density Result in GSBdP with Applications to the Approximation of Brittle Fracture Energies. <i>Archive for Rational Mechanics and Analysis</i> , 2019, 232, 1329-1378.	1.1	37
26	Variational approximation of size-mass energies for k-dimensional currents. <i>ESAIM - Control, Optimisation and Calculus of Variations</i> , 2019, 25, 43.	0.7	4
27	A phase-field approximation of the Steiner problem in dimension two. <i>Advances in Calculus of Variations</i> , 2019, 12, 157-179.	0.7	14
28	Approximation of a Brittle Fracture Energy with a Constraint of Non-interpenetration. <i>Archive for Rational Mechanics and Analysis</i> , 2018, 228, 867-889.	1.1	31
29	Stochastic Primal-Dual Hybrid Gradient Algorithm with Arbitrary Sampling and Imaging Applications. <i>SIAM Journal on Optimization</i> , 2018, 28, 2783-2808.	1.2	76
30	Regularity for the Optimal Compliance Problem with Length Penalization. <i>SIAM Journal on Mathematical Analysis</i> , 2017, 49, 1166-1224.	0.9	6
31	Existence and Uniqueness for a Crystalline Mean Curvature Flow. <i>Communications on Pure and Applied Mathematics</i> , 2017, 70, 1084-1114.	1.2	17
32	Accelerated Alternating Descent Methods for Dykstra-Like Problems. <i>Journal of Mathematical Imaging and Vision</i> , 2017, 59, 481-497.	0.8	10
33	Geometric properties of solutions to the total variation denoising problem. <i>Inverse Problems</i> , 2017, 33, 015002.	1.0	35
34	Occlusion detection in dense stereo estimation with convex optimization. , 2017, , .		1
35	Some results on anisotropic fractional mean curvature flows. <i>Interfaces and Free Boundaries</i> , 2017, 19, 393-415.	0.2	16
36	Faster PET reconstruction with a stochastic primal-dual hybrid gradient method. , 2017, , .		6

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37	Korn-Poincare inequalities for functions with a small jump set. Indiana University Mathematics Journal, 2016, 65, 1373-1399.	0.4	31
38	Mathematical Imaging and Surface Processing. Oberwolfach Reports, 2016, 13, 155-214.	0.0	0
39	An introduction to continuous optimization for imaging. Acta Numerica, 2016, 25, 161-319.	6.3	331
40	Total Variation Denoising and Support Localization of the Gradient. Journal of Physics: Conference Series, 2016, 756, 012007.	0.3	3
41	On the ergodic convergence rates of a first-order primal-dual algorithm. Mathematical Programming, 2016, 159, 253-287.	1.6	253
42	Continuous Matching via Vector Field Flow. Computer Graphics Forum, 2015, 34, 129-139.	1.8	21
43	Fine properties of the subdifferential for a class of one-homogeneous functionals. Advances in Calculus of Variations, 2015, 8, 31-42.	0.7	7
44	On the Convergence of the Iterates of the "Fast Iterative Shrinkage/Thresholding Algorithm". Journal of Optimization Theory and Applications, 2015, 166, 968-982.	0.8	248
45	Nonlocal Curvature Flows. Archive for Rational Mechanics and Analysis, 2015, 218, 1263-1329.	1.1	52
46	Total Variation in Imaging. , 2015, , 1455-1499.		15
47	Supervised Descriptor Learning for Non-Rigid Shape Matching. Lecture Notes in Computer Science, 2015, , 283-298.	1.0	18
48	The $\Gamma$ -limit for singularly perturbed functionals of Perona-Malik type in arbitrary dimension. Mathematical Models and Methods in Applied Sciences, 2014, 24, 1091-1113.	1.7	6
49	Total Variation in Imaging. , 2014, , 1-39.		1
50	Convex Relaxation of Vectorial Problems with Coupled Regularization. SIAM Journal on Imaging Sciences, 2014, 7, 294-336.	1.3	18
51	Properties of minimizers of the total variation and of the solutions of the total variation flow. , 2014, , .		0
52	Adapted Basis for Nonlocal Reconstruction of Missing Spectrum. SIAM Journal on Imaging Sciences, 2014, 7, 1484-1502.	1.3	3
53	A remark on the anisotropic outer Minkowski content. Advances in Calculus of Variations, 2014, 7, .	0.7	10
54	Plane-Like Minimizers and Differentiability of the Stable Norm. Journal of Geometric Analysis, 2014, 24, 1447-1489.	0.5	7

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55	The stress intensity factor for non-smooth fractures in antiplane elasticity. <i>Calculus of Variations and Partial Differential Equations</i> , 2013, 47, 589-610.	0.9	5
56	Guest Editorial: Variational Models, Convex Analysis and Numerical Optimization in Mathematical Imaging. <i>Journal of Mathematical Imaging and Vision</i> , 2013, 47, 165-166.	0.8	0
57	Representation, relaxation and convexity for variational problems in Wiener spaces. <i>Journal Des Mathematiques Pures Et Appliquees</i> , 2013, 99, 419-435.	0.8	3
58	Macroscopic contact angle and liquid drops on rough solid surfaces via homogenization and numerical simulations. <i>ESAIM: Mathematical Modelling and Numerical Analysis</i> , 2013, 47, 837-858.	0.8	4
59	Minimizing movements and level set approaches to nonlocal variational geometric flows. , 2013, , 93-104.		6
60	A Hölder infinity Laplacian. <i>ESAIM - Control, Optimisation and Calculus of Variations</i> , 2012, 18, 799-835.	0.7	41
61	A convex representation for the vectorial Mumford-Shah functional. , 2012, , .		25
62	Mean curvature flow with obstacles. <i>Annales De L'Institut Henri Poincare (C) Analyse Non Lineaire</i> , 2012, 29, 667-681.	0.7	9
63	A Nonlocal Mean Curvature Flow and Its Semi-implicit Time-Discrete Approximation. <i>SIAM Journal on Mathematical Analysis</i> , 2012, 44, 4048-4077.	0.9	22
64	A Convex Approach to Minimal Partitions. <i>SIAM Journal on Imaging Sciences</i> , 2012, 5, 1113-1158.	1.3	133
65	Consistency result for a non monotone scheme for anisotropic mean curvature flow. <i>Interfaces and Free Boundaries</i> , 2012, 14, 1-35.	0.2	14
66	A posteriori error estimates for the effective Hamiltonian of dislocation dynamics. <i>Numerische Mathematik</i> , 2012, 121, 281-335.	0.9	6
67	Diagonal preconditioning for first order primal-dual algorithms in convex optimization. , 2011, , .		228
68	An Upwind Finite-Difference Method for Total Variation-Based Image Smoothing. <i>SIAM Journal on Imaging Sciences</i> , 2011, 4, 277-299.	1.3	47
69	Regularity for solutions of the total variation denoising problem. <i>Revista Matematica Iberoamericana</i> , 2011, 27, 233-252.	0.4	33
70	A First-Order Primal-Dual Algorithm for Convex Problems with Applications to Imaging. <i>Journal of Mathematical Imaging and Vision</i> , 2011, 40, 120-145.	0.8	2,986
71	ON THE GRADIENT FLOW OF A ONE-HOMOGENEOUS FUNCTIONAL. <i>Confluentes Mathematici</i> , 2011, 03, 617-635.	0.2	14
72	Total Variation in Imaging. , 2011, , 1016-1057.		13

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73	Continuous limits of discrete perimeters. ESAIM: Mathematical Modelling and Numerical Analysis, 2010, 44, 207-230.	0.8	18
74	Revisiting Energy Release Rates in Brittle Fracture. Journal of Nonlinear Science, 2010, 20, 395-424.	1.0	37
75	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.	0.2	25
76	An Introduction to Total Variation for Image Analysis. Radon Series on Computational and Applied Mathematics, 2010, , 263-340.	0.4	192
77	Global Solutions of Variational Models with Convex Regularization. SIAM Journal on Imaging Sciences, 2010, 3, 1122-1145.	1.3	124
78	On Total Variation Minimization and Surface Evolution Using Parametric Maximum Flows. International Journal of Computer Vision, 2009, 84, 288-307.	10.9	110
79	When and how do cracks propagate?. Journal of the Mechanics and Physics of Solids, 2009, 57, 1614-1622.	2.3	98
80	The volume preserving crystalline mean curvature flow of convex sets in $\mathbb{R}^N$ . Journal Des Mathematiques Pures Et Appliquees, 2009, 92, 499-527.	0.8	25
81	An algorithm for minimizing the Mumford-Shah functional. , 2009, , .		196
82	A convex relaxation approach for computing minimal partitions. , 2009, , .		165
83	Enhancement of Blurred and Noisy Images Based on an Original Variant of the Total Variation. Lecture Notes in Computer Science, 2009, , 368-376.	1.0	2
84	A convex relaxation approach for computing minimal partitions. , 2009, , .		13
85	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.	0.5	18
86	A characterization of convex calibrable sets in $(\mathbb{R}^N)$ with respect to anisotropic norms. Annales De L'Institut Henri Poincare (C) Analyse Non Lineaire, 2008, 25, 803-832.	0.7	19
87	Crack Initiation in Brittle Materials. Archive for Rational Mechanics and Analysis, 2008, 188, 309-349.	1.1	57
88	Implicit time discretization of the mean curvature flow with a discontinuous forcing term. Interfaces and Free Boundaries, 2008, 10, 283-300.	0.2	6
89	APPROXIMATION OF THE ANISOTROPIC MEAN CURVATURE FLOW. Mathematical Models and Methods in Applied Sciences, 2007, 17, 833-844.	1.7	14
90	The Discontinuity Set of Solutions of the TV Denoising Problem and Some Extensions. Multiscale Modeling and Simulation, 2007, 6, 879-894.	0.6	106

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91	Interaction of a Bulk and a Surface Energy with a Geometrical Constraint. SIAM Journal on Mathematical Analysis, 2007, 39, 77-102.	0.9	20
92	A relaxation result for energies defined on pairs set-function and applications. ESAIM - Control, Optimisation and Calculus of Variations, 2007, 13, 717-734.	0.7	27
93	Piecewise rigidity. Journal of Functional Analysis, 2007, 244, 134-153.	0.7	32
94	Total Variation Minimization and Graph Cuts for Moving Objects Segmentation. , 2007, , 743-753.		6
95	Uniqueness of the Cheeger set of a convex body. Pacific Journal of Mathematics, 2007, 232, 77-90.	0.2	37
96	Convergence of an Algorithm for the Anisotropic and Crystalline Mean Curvature Flow. SIAM Journal on Mathematical Analysis, 2006, 37, 1978-1987.	0.9	25
97	Anisotropic curvature-driven flow of convex sets. Nonlinear Analysis: Theory, Methods & Applications, 2006, 65, 1547-1577.	0.6	36
98	Crystalline Mean Curvature Flow of Convex Sets. Archive for Rational Mechanics and Analysis, 2006, 179, 109-152.	1.1	50
99	The Phase-Field Method in Optimal Design. , 2006, , 207-215.		28
100	Time-delay regularization of anisotropic diffusion and image processing. ESAIM: Mathematical Modelling and Numerical Analysis, 2005, 39, 231-251.	0.8	22
101	Addendum to "An approximation result for special functions with bounded deformation". J. Math. Pures Appl. (9) 83 (7) (2004) 929-954]: the N-dimensional case. Journal Des Mathematiques Pures Et Appliquees, 2005, 84, 137-145.	0.8	37
102	A characterization of convex calibrable sets in. Mathematische Annalen, 2005, 332, 329-366.	0.7	97
103	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.	0.4	160
104	Dual Norms and Image Decomposition Models. International Journal of Computer Vision, 2005, 63, 85-104.	10.9	287
105	Image Decomposition into a Bounded Variation Component and an Oscillating Component. Journal of Mathematical Imaging and Vision, 2005, 22, 71-88.	0.8	270
106	Evolution of characteristic functions of convex sets in the plane by the minimizing total variation flow. Interfaces and Free Boundaries, 2005, 7, 29-53.	0.2	46
107	Total Variation Minimization and a Class of Binary MRF Models. Lecture Notes in Computer Science, 2005, , 136-152.	1.0	198
108	A Fast Spectral Method for Active 3D Shape Reconstruction. Journal of Mathematical Imaging and Vision, 2004, 20, 73-87.	0.8	591

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109	An Algorithm for Total Variation Minimization and Applications. <i>Journal of Mathematical Imaging and Vision</i> , 2004, 20, 89-97.	0.8	1,988
110	Practical, Unified, Motion and Missing Data Treatment in Degraded Video. <i>Journal of Mathematical Imaging and Vision</i> , 2004, 20, 163-177.	0.8	135
111	An approximation result for special functions with bounded deformation. <i>Journal Des Mathematiques Pures Et Appliquees</i> , 2004, 83, 929-954.	0.8	116
112	A l 1-Unified Variational Framework for Image Restoration. <i>Lecture Notes in Computer Science</i> , 2004, , 1-13.	1.0	63
113	An algorithm for Mean Curvature Motion. <i>Interfaces and Free Boundaries</i> , 2004, 6, 195-218.	0.2	86
114	A Density Result in Two-Dimensional Linearized Elasticity, and Applications. <i>Archive for Rational Mechanics and Analysis</i> , 2003, 167, 211-233.	1.1	107
115	$C^\infty$ regularity of the free boundary for a two-dimensional optimal compliance problem. <i>Calculus of Variations and Partial Differential Equations</i> , 2003, 18, 77-94.	0.9	20
116	Image Decomposition Application to SAR Images. <i>Lecture Notes in Computer Science</i> , 2003, , 297-312.	1.0	38
117	Design-dependent loads in topology optimization. <i>ESAIM - Control, Optimisation and Calculus of Variations</i> , 2003, 9, 19-48.	0.7	276
118	Control of the Wave Equation by Time-Dependent Coefficient. <i>ESAIM - Control, Optimisation and Calculus of Variations</i> , 2002, 8, 375-392.	0.7	11
119	Computing the Equilibrium Configuration of Epitaxially Strained Crystalline Films. <i>SIAM Journal on Applied Mathematics</i> , 2002, 62, 1093-1121.	0.8	43
120	Interpreting translation-invariant wavelet shrinkage as a new image smoothing scale space. <i>IEEE Transactions on Image Processing</i> , 2001, 10, 993-1000.	6.0	44
121	Implementation of an adaptive finite-element approximation of the Mumford-Shah functional. <i>Numerische Mathematik</i> , 2000, 85, 609-646.	0.9	112
122	Discrete approximation of the Mumford-Shah functional in dimension two. <i>ESAIM: Mathematical Modelling and Numerical Analysis</i> , 1999, 33, 651-672.	0.8	58
123	Finite-differences discretizations of the mumford-shah functional. <i>ESAIM: Mathematical Modelling and Numerical Analysis</i> , 1999, 33, 261-288.	0.8	97
124	Un principe du maximum pour des opérateurs monotones. <i>Comptes Rendus Mathematique</i> , 1998, 326, 823-827.	0.5	2
125	Nonlinear wavelet image processing: variational problems, compression, and noise removal through wavelet shrinkage. <i>IEEE Transactions on Image Processing</i> , 1998, 7, 319-335.	6.0	659
126	Continuity of neumann linear elliptic problems on varying two-dimensional bounded open sets. <i>Communications in Partial Differential Equations</i> , 1997, 22, 811-840.	1.0	40



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127	Image recovery via total variation minimization and related problems. <i>Numerische Mathematik</i> , 1997, 76, 167-188.	0.9	1,330
128	Minimizing movements of the Mumford and Shah energy. <i>Discrete and Continuous Dynamical Systems</i> , 1997, 3, 153-174.	0.5	8
129	Image restoration by constrained total variation minimization and variants. , 1995, , .		7
130	Image Segmentation by Variational Methods: Mumford and Shah Functional and the Discrete Approximations. <i>SIAM Journal on Applied Mathematics</i> , 1995, 55, 827-863.	0.8	169
131	A uniqueness result in the theory of stereo vision: Coupling Shape from Shading and Binocular Information allows Unambiguous Depth Reconstruction. <i>Annales De L'Institut Henri Poincare (C) Analyse Non Lineaire</i> , 1994, 11, 1-16.	0.7	9
132	Partial differential equations and image processing. , 0, , .		47
133	Anisotropic tubular neighborhoods of sets. <i>Mathematische Zeitschrift</i> , 0, , 1.	0.4	1
134	Korn and Poincaré-Korn inequalities for functions with a small jump set. <i>Mathematische Annalen</i> , 0, , 1.	0.7	10
135	Existence and uniqueness for planar anisotropic and crystalline curvature flow. , 0, , .		5
136	Energy release rate for non-smooth cracks in planar elasticity. <i>Journal De L'Ecole Polytechnique - Mathematiques</i> , 0, 2, 117-152.	0.0	8
137	A remark on accelerated block coordinate descent for computing the proximity operators of a sum of convex functions. <i>SMAI Journal of Computational Mathematics</i> , 0, 1, 29-54.	0.0	35