

Heinz Bauschke

List of Publications by Citations

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132
papers

6,571
citations

33
h-index

79
g-index

142
ext. papers

7,493
ext. citations

1.5
avg, IF

6.41
L-index

#	Paper	IF	Citations
132	Convex Analysis and Monotone Operator Theory in Hilbert Spaces. <i>CMS Books in Mathematics</i> , 2011	1	1322
131	On Projection Algorithms for Solving Convex Feasibility Problems. <i>SIAM Review</i> , 1996 , 38, 367-426	7.4	1045
130	Convex Analysis and Monotone Operator Theory in Hilbert Spaces. <i>CMS Books in Mathematics</i> , 2017	1	319
129	Phase retrieval, error reduction algorithm, and Fienup variants: a view from convex optimization. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 2002 , 19, 1334-45	1.8	309
128	A Weak-to-Strong Convergence Principle for Fejr-Monotone Methods in Hilbert Spaces. <i>Mathematics of Operations Research</i> , 2001 , 26, 248-264	1.5	283
127	The Approximation of Fixed Points of Compositions of Nonexpansive Mappings in Hilbert Space. <i>Journal of Mathematical Analysis and Applications</i> , 1996 , 202, 150-159	1.1	242
126	Projection and proximal point methods: convergence results and counterexamples. <i>Nonlinear Analysis: Theory, Methods & Applications</i> , 2004 , 56, 715-738	1.3	160
125	ESSENTIAL SMOOTHNESS, ESSENTIAL STRICT CONVEXITY, AND LEGENDRE FUNCTIONS IN BANACH SPACES. <i>Communications in Contemporary Mathematics</i> , 2001 , 03, 615-647	1.1	155
124	On the convergence of von Neumann's alternating projection algorithm for two sets. <i>Set-Valued and Variational Analysis</i> , 1993 , 1, 185-212		148
123	Hybrid projection-reflection method for phase retrieval. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 2003 , 20, 1025-34	1.8	142
122	Bregman Monotone Optimization Algorithms. <i>SIAM Journal on Control and Optimization</i> , 2003 , 42, 596-636		141
121	Strong conical hull intersection property, bounded linear regularity, Jameson's property (G), and error bounds in convex optimization. <i>Mathematical Programming</i> , 1999 , 86, 135-160	2.1	131
120	Finding best approximation pairs relative to two closed convex sets in Hilbert spaces. <i>Journal of Approximation Theory</i> , 2004 , 127, 178-192	0.9	110
119	Dykstra's Alternating Projection Algorithm for Two Sets. <i>Journal of Approximation Theory</i> , 1994 , 79, 418-443		107
118	A Descent Lemma Beyond Lipschitz Gradient Continuity: First-Order Methods Revisited and Applications. <i>Mathematics of Operations Research</i> , 2017 , 42, 330-348	1.5	94
117	The method of cyclic projections for closed convex sets in Hilbert space. <i>Contemporary Mathematics</i> , 1997 , 1-38	1.6	85
116	Extrapolation algorithm for affine-convex feasibility problems. <i>Numerical Algorithms</i> , 2006 , 41, 239-274	2.1	57

115	The asymptotic behavior of the composition of two resolvents. <i>Nonlinear Analysis: Theory, Methods & Applications</i> , 2005 , 60, 283-301	1.3	57
114	The Proximal Average: Basic Theory. <i>SIAM Journal on Optimization</i> , 2008 , 19, 766-785	2	55
113	Linear and strong convergence of algorithms involving averaged nonexpansive operators. <i>Journal of Mathematical Analysis and Applications</i> , 2015 , 421, 1-20	1.1	54
112	The rate of linear convergence of the Douglas-Bachford algorithm for subspaces is the cosine of the Friedrichs angle. <i>Journal of Approximation Theory</i> , 2014 , 185, 63-79	0.9	53
111	Accelerating the convergence of the method of alternating projections. <i>Transactions of the American Mathematical Society</i> , 2003 , 355, 3433-3461	1	46
110	Construction of best Bregman approximations in reflexive Banach spaces. <i>Proceedings of the American Mathematical Society</i> , 2003 , 131, 3757-3766	0.8	44
109	Fitzpatrick functions, cyclic monotonicity and Rockafellar's antiderivative. <i>Nonlinear Analysis: Theory, Methods & Applications</i> , 2007 , 66, 1198-1223	1.3	43
108	Dykstras algorithm with bregman projections: A convergence proof. <i>Optimization</i> , 2000 , 48, 409-427	1.2	42
107	Hyperbolic Polynomials and Convex Analysis. <i>Canadian Journal of Mathematics</i> , 2001 , 53, 470-488	0.8	41
106	Working memory impairment in a transgenic amyloid precursor protein TgCRND8 mouse model of Alzheimer's disease. <i>Genes, Brain and Behavior</i> , 2005 , 4, 197-208	3.6	40
105	Fitzpatrick Functions and Continuous Linear Monotone Operators. <i>SIAM Journal on Optimization</i> , 2007 , 18, 789-809	2	35
104	Restricted Normal Cones and the Method of Alternating Projections: Theory. <i>Set-Valued and Variational Analysis</i> , 2013 , 21, 431-473	1	34
103	Joint and Separate Convexity of the Bregman Distance. <i>Studies in Computational Mathematics</i> , 2001 , 8, 23-36		34
102	On the Douglas-Bachford algorithm. <i>Mathematical Programming</i> , 2017 , 164, 263-284	2.1	33
101	Recompression of JPEG images by requantization. <i>IEEE Transactions on Image Processing</i> , 2003 , 12, 843-857		33
100	A norm convergence result on random products of relaxed projections in Hilbert space. <i>Transactions of the American Mathematical Society</i> , 1995 , 347, 1365-1373	1	32
99	Projection Methods: Swiss Army Knives for Solving Feasibility and Best Approximation Problems with Halfspaces. <i>Contemporary Mathematics</i> , 2015 , 1-40	1.6	31
98	The kernel average for two convex functions and its application to the extension and representation of monotone operators. <i>Transactions of the American Mathematical Society</i> , 2009 , 361, 5947-5965	1	29

97	Reflection-Projection Method for Convex Feasibility Problems with an Obtuse Cone. <i>Journal of Optimization Theory and Applications</i> , 2004 , 120, 503-531	1.6	28
96	A new proximal point iteration that converges weakly but not in norm. <i>Proceedings of the American Mathematical Society</i> , 2005 , 133, 1829-1835	0.8	28
95	Restricted Normal Cones and Sparsity Optimization with Affine Constraints. <i>Foundations of Computational Mathematics</i> , 2014 , 14, 63-83	2.7	27
94	How to Transform One Convex Function Continuously into Another. <i>SIAM Review</i> , 2008 , 50, 115-132	7.4	27
93	Firmly Nonexpansive Mappings and Maximally Monotone Operators: Correspondence and Duality. <i>Set-Valued and Variational Analysis</i> , 2012 , 20, 131-153	1	26
92	On the local convergence of the Douglas-Rachford algorithm. <i>Archiv Der Mathematik</i> , 2014 , 102, 589-600	0.4	25
91	Attouch-Théra duality revisited: Paramonotonicity and operator splitting. <i>Journal of Approximation Theory</i> , 2012 , 164, 1065-1084	0.9	25
90	A strongly convergent reflection method for finding the projection onto the intersection of two closed convex sets in a Hilbert space. <i>Journal of Approximation Theory</i> , 2006 , 141, 63-69	0.9	25
89	Restricted Normal Cones and the Method of Alternating Projections: Applications. <i>Set-Valued and Variational Analysis</i> , 2013 , 21, 475-501	1	24
88	The asymptotic behavior of the composition of two resolvents. <i>Nonlinear Analysis: Theory, Methods & Applications</i> , 2005 , 60, 283-301	1.3	24
87	Primal-Dual Symmetric Intrinsic Methods for Finding Antiderivatives of Cyclically Monotone Operators. <i>SIAM Journal on Control and Optimization</i> , 2007 , 46, 2031-2051	1.9	23
86	Optimal Rates of Linear Convergence of Relaxed Alternating Projections and Generalized Douglas-Rachford Methods for Two Subspaces. <i>Numerical Algorithms</i> , 2016 , 73, 33-76	2.1	22
85	Characterizing arbitrarily slow convergence in the method of alternating projections. <i>International Transactions in Operational Research</i> , 2009 , 16, 413-425	2.9	22
84	Bregman distances and Chebyshev sets. <i>Journal of Approximation Theory</i> , 2009 , 159, 3-25	0.9	22
83	An EM algorithm for dynamic SPECT. <i>IEEE Transactions on Medical Imaging</i> , 1999 , 18, 252-61	11.7	22
82	The composition of projections onto closed convex sets in Hilbert space is asymptotically regular. <i>Proceedings of the American Mathematical Society</i> , 2002 , 131, 141-146	0.8	21
81	The Douglas-Rachford Algorithm for Two (Not Necessarily Intersecting) Affine Subspaces. <i>SIAM Journal on Optimization</i> , 2016 , 26, 968-985	2	21
80	The piecewise linear-quadratic model for computational convex analysis. <i>Computational Optimization and Applications</i> , 2009 , 43, 95-118	1.4	20

79	The resolvent average for positive semidefinite matrices. <i>Linear Algebra and Its Applications</i> , 2010 , 432, 1757-1771	0.9	20
78	A Note on the Paper by Eckstein and Svaiter on General Projective Splitting Methods for Sums of Maximal Monotone Operators <i>SIAM Journal on Control and Optimization</i> , 2009 , 48, 2513-2515	1.9	19
77	Projection Algorithms: Results and Open Problems. <i>Studies in Computational Mathematics</i> , 2001 , 11-22		18
76	Iterating Bregman Retractions. <i>SIAM Journal on Optimization</i> , 2003 , 13, 1159-1173	2	17
75	On the Finite Convergence of the Douglas–Rachford Algorithm for Solving (Not Necessarily Convex) Feasibility Problems in Euclidean Spaces. <i>SIAM Journal on Optimization</i> , 2017 , 27, 507-537	2	16
74	Projecting onto the Intersection of a Cone and a Sphere. <i>SIAM Journal on Optimization</i> , 2018 , 28, 2158-2188	2.1	16
73	Maximal monotonicity of dense type, local maximal monotonicity, and monotonicity of the conjugate are all the same for continuous linear operators. <i>Pacific Journal of Mathematics</i> , 1999 , 189, 1-20	0.5	16
72	On Slater’s condition and finite convergence of the Douglas–Bachford algorithm for solving convex feasibility problems in Euclidean spaces. <i>Journal of Global Optimization</i> , 2016 , 65, 329-349	1.5	15
71	Near equality, near convexity, sums of maximally monotone operators, and averages of firmly nonexpansive mappings. <i>Mathematical Programming</i> , 2013 , 139, 55-70	2.1	15
70	Fenchel duality, Fitzpatrick functions and the extension of firmly nonexpansive mappings. <i>Proceedings of the American Mathematical Society</i> , 2006 , 135, 135-139	0.8	15
69	The Douglas–Bachford algorithm in the affine-convex case. <i>Operations Research Letters</i> , 2016 , 44, 379-382	1.5	13
68	Generalized Solutions for the Sum of Two Maximally Monotone Operators. <i>SIAM Journal on Control and Optimization</i> , 2014 , 52, 1034-1047	1.9	13
67	Rectangularity and paramonotonicity of maximally monotone operators. <i>Optimization</i> , 2014 , 63, 487-504	1.2	12
66	Compositions and convex combinations of asymptotically regular firmly nonexpansive mappings are also asymptotically regular. <i>Fixed Point Theory and Applications</i> , 2012 , 2012,	1.4	12
65	Autoconjugate representers for linear monotone operators. <i>Mathematical Programming</i> , 2010 , 123, 5-24	2.1	12
64	On Borwein–Wiersma Decompositions of Monotone Linear Relations. <i>SIAM Journal on Optimization</i> , 2010 , 20, 2636-2652	2	11
63	Symbolic computation of Fenchel conjugates. <i>ACM Communications in Computer Algebra</i> , 2006 , 40, 18-28	0.2	11
62	Regularizing with Bregman–Moreau Envelopes. <i>SIAM Journal on Optimization</i> , 2018 , 28, 3208-3228	2	11

61	Examples of discontinuous maximal monotone linear operators and the solution to a recent problem posed by B.F. Svaiter. <i>Journal of Mathematical Analysis and Applications</i> , 2010 , 370, 224-241	1.1	10
60	On the Range of the Douglas-Rachford Operator. <i>Mathematics of Operations Research</i> , 2016 , 41, 884-897	1.5	10
59	On Linear Convergence of Non-Euclidean Gradient Methods without Strong Convexity and Lipschitz Gradient Continuity. <i>Journal of Optimization Theory and Applications</i> , 2019 , 182, 1068-1087	1.6	9
58	On Subgradient Projectors. <i>SIAM Journal on Optimization</i> , 2015 , 25, 1064-1082	2	9
57	On the order of the operators in the Douglas-Rachford algorithm. <i>Optimization Letters</i> , 2016 , 10, 447-455	1.1	8
56	The Method of Alternating Relaxed Projections for Two Nonconvex Sets. <i>Vietnam Journal of Mathematics</i> , 2014 , 42, 421-450	0.5	8
55	The Douglas-Rachford algorithm for a hyperplane and a doubleton. <i>Journal of Global Optimization</i> , 2019 , 74, 79-93	1.5	8
54	On the linear convergence of circumcentered isometry methods. <i>Numerical Algorithms</i> , 2021 , 87, 263-297	1.1	8
53	Stadium Norm and Douglas-Rachford Splitting: A New Approach to Road Design Optimization. <i>Operations Research</i> , 2016 , 64, 201-218	2.3	7
52	The Brezis-Browder Theorem in a general Banach space. <i>Journal of Functional Analysis</i> , 2012 , 262, 4948-4974	1.1	7
51	Bregman distances and Klee sets. <i>Journal of Approximation Theory</i> , 2009 , 158, 170-183	0.9	7
50	Compositions and averages of two resolvents: Relative geometry of fixed points sets and a partial answer to a question by C. Byrne. <i>Nonlinear Analysis: Theory, Methods & Applications</i> , 2011 , 74, 4550-4572	1.3	7
49	Stronger maximal monotonicity properties of linear operators. <i>Bulletin of the Australian Mathematical Society</i> , 1999 , 60, 163-174	0.4	7
48	Firmly nonexpansive and Kirszbraum-Valentine extensions: a constructive approach via monotone operator theory. <i>Contemporary Mathematics</i> , 2010 , 55-64	1.6	7
47	A derivative-free comirror algorithm for convex optimization. <i>Optimization Methods and Software</i> , 2015 , 30, 706-726	1.3	6
46	Generalized monotone operators and their averaged resolvents. <i>Mathematical Programming</i> , 2020 , 189, 55	2.1	6
45	The Resolvent Average of Monotone Operators: Dominant and Recessive Properties. <i>SIAM Journal on Optimization</i> , 2016 , 26, 602-634	2	6
44	An Answer to S. Simons' Question on the Maximal Monotonicity of the Sum of a Maximal Monotone Linear Operator and a Normal Cone Operator. <i>Set-Valued and Variational Analysis</i> , 2009 , 17, 195-201	1	6

43	A Convex-Analytical Approach to Extension Results for n-Cyclically Monotone Operators. <i>Set-Valued and Variational Analysis</i> , 2007 , 15, 297-306		6
42	Duality for Bregman projections onto translated cones and affine subspaces. <i>Journal of Approximation Theory</i> , 2003 , 121, 1-12	0.9	6
41	Circumcentered Methods Induced by Isometries. <i>Vietnam Journal of Mathematics</i> , 2020 , 48, 471-508	0.5	6
40	On the asymptotic behaviour of the Aragón Artacho-ampoy algorithm. <i>Operations Research Letters</i> , 2018 , 46, 585-587	1	6
39	A Bregman projection method for approximating fixed points of quasi-Bregman nonexpansive mappings. <i>Applicable Analysis</i> , 2015 , 94, 75-84	0.8	5
38	On the Finite Convergence of a Projected Cutter Method. <i>Journal of Optimization Theory and Applications</i> , 2015 , 165, 901-916	1.6	5
37	Every maximally monotone operator of Fitzpatrick-Björls type is actually of dense type. <i>Optimization Letters</i> , 2012 , 6, 1875-1881	1.1	5
36	New Demiclosedness Principles for (Firmly) Nonexpansive Operators. <i>Springer Proceedings in Mathematics and Statistics</i> , 2013 , 19-28	0.2	5
35	Affine Nonexpansive Operators, Attouch-Théra Duality and the Douglas-Bachford Algorithm. <i>Set-Valued and Variational Analysis</i> , 2017 , 25, 481-505	1	4
34	The magnitude of the minimal displacement vector for compositions and convex combinations of firmly nonexpansive mappings. <i>Optimization Letters</i> , 2018 , 12, 1465-1474	1.1	4
33	An explicit example of a maximal 3-cyclically monotone operator with bizarre properties. <i>Nonlinear Analysis: Theory, Methods & Applications</i> , 2008 , 69, 2875-2891	1.3	4
32	Self-Dual Smooth Approximations of Convex Functions via the Proximal Average. <i>Springer Optimization and Its Applications</i> , 2011 , 23-32	0.4	4
31	On the Minimal Displacement Vector of Compositions and Convex Combinations of Nonexpansive Mappings. <i>Foundations of Computational Mathematics</i> , 2020 , 20, 1653-1666	2.7	3
30	A class of multi-marginal c-cyclically monotone sets with explicit c-splitting potentials. <i>Journal of Mathematical Analysis and Applications</i> , 2018 , 461, 333-348	1.1	3
29	On Douglas-Bachford operators that fail to be proximal mappings. <i>Mathematical Programming</i> , 2018 , 168, 55-61	2.1	3
28	On the convexity of piecewise-defined functions. <i>ESAIM - Control, Optimisation and Calculus of Variations</i> , 2016 , 22, 728-742	1	3
27	On a result of Pazy concerning the asymptotic behaviour of nonexpansive mappings. <i>Journal of Fixed Point Theory and Applications</i> , 2016 , 18, 297-307	1.4	3
26	Fixed Points of Averages of Resolvents: Geometry and Algorithms. <i>SIAM Journal on Optimization</i> , 2012 , 22, 24-40	2	3

25	Proof of a Conjecture by Deutsch, Li, and Swetits on Duality of Optimization Problems. <i>Journal of Optimization Theory and Applications</i> , 1999 , 102, 697-703	1.6	3
24	Constraint Splitting and Projection Methods for Optimal Control of Double Integrator 2019 , 45-68		3
23	On the Behavior of the Douglas--Rachford Algorithm for Minimizing a Convex Function Subject to a Linear Constraint. <i>SIAM Journal on Optimization</i> , 2020 , 30, 2559-2576	2	3
22	Chebyshev Sets, Klee Sets, and Chebyshev Centers with Respect to Bregman Distances: Recent Results and Open Problems. <i>Springer Optimization and Its Applications</i> , 2011 , 1-21	0.4	3
21	The Resolvent Order: A Unification of the Orders by Zarantonello, by Loewner, and by Moreau. <i>SIAM Journal on Optimization</i> , 2017 , 27, 466-477	2	2
20	On sums and convex combinations of projectors onto convex sets. <i>Journal of Approximation Theory</i> , 2019 , 242, 31-57	0.9	2
19	Subgradient Projectors: Extensions, Theory, and Characterizations. <i>Set-Valued and Variational Analysis</i> , 2018 , 26, 1009-1078	1	2
18	Construction of Pathological Maximally Monotone Operators on Non-reflexive Banach Spaces. <i>Set-Valued and Variational Analysis</i> , 2012 , 20, 387-415	1	2
17	Klee sets and Chebyshev centers for the right Bregman distance. <i>Journal of Approximation Theory</i> , 2010 , 162, 1225-1244	0.9	2
16	A new generation of iterative transform algorithms for phase contrast tomography		2
15	Best approximation mappings in Hilbert spaces. <i>Mathematical Programming</i> ,1	2.1	2
14	On the Maximal Monotonicity of the Sum of a Maximal Monotone Linear Relation and the Subdifferential Operator of a Sublinear Function. <i>Contemporary Mathematics</i> , 2012 , 19-26	1.6	2
13	Applying FISTA to optimization problems (with or) without minimizers. <i>Mathematical Programming</i> , 2020 , 184, 349-381	2.1	2
12	On Dykstra's algorithm: finite convergence, stalling, and the method of alternating projections. <i>Optimization Letters</i> , 2020 , 14, 1975-1987	1.1	1
11	Resolvents and Yosida Approximations of Displacement Mappings of Isometries. <i>Set-Valued and Variational Analysis</i> , 2021 , 29, 721	1	1
10	The difference vectors for convex sets and a resolution of the geometry conjecture. <i>Open Journal of Mathematical Optimization</i> ,2, 1-18		0
9	Attouch--Thibault Duality, Generalized Cycles, and Gap Vectors. <i>SIAM Journal on Optimization</i> , 2021 , 31, 1926-1946	2	0
8	The Projection onto the Cross. <i>Set-Valued and Variational Analysis</i> ,1	1	0

- 7 Maximally monotone operators with ranges whose closures are not convex and an answer to a recent question by Stephen Simons. *Proceedings of the American Mathematical Society*, **2020**, 148, 2035-2044 0.8
- 6 Edelstein's Astonishing Affine Isometry. *American Mathematical Monthly*, **2021**, 128, 796-809 0.3
- 5 Numerical Explorations of Feasibility Algorithms for Finding Points in the Intersection of Finite Sets **2019**, 69-90
- 4 Finding best approximation pairs for two intersections of closed convex sets. *Computational Optimization and Applications*, **2019**, 51, 1-14 1.4
- 3 Stronger Notions of Monotonicity. *CMS Books in Mathematics*, **2017**, 383-392 1
- 2 Multi-marginal maximal monotonicity and convex analysis. *Mathematical Programming*, **2021**, 185, 385-408 0.8
- 1 On angles between convex sets in Hilbert spaces. *Journal of Mathematical Analysis and Applications*, **2021**, 502, 125239 1.1