Karlheinz Gröchenig

List of Publications by Year in descending order

104 papers	5,968 citations	117625 34 h-index	74163 75 g-index
107 all docs	107 docs citations	107 times ranked	1541 citing authors

#	Article	IF	Citations
1	Foundations of Time-Frequency Analysis. Applied and Numerical Harmonic Analysis, 2001, , .	0.3	1,556
2	Nonuniform Sampling and Reconstruction in Shift-Invariant Spaces. SIAM Review, 2001, 43, 585-620.	9.5	586
3	Time–Frequency analysis of localization operators. Journal of Functional Analysis, 2003, 205, 107-131.	1.4	190
4	Reconstruction Algorithms in Irregular Sampling. Mathematics of Computation, 1992, 59, 181.	2.1	166
5	Localization of Frames, Banach Frames, and the Invertibility of the Frame Operator. Journal of Fourier Analysis and Applications, 2004, 10, 105-132.	1.0	153
6	Modulation spaces and pseudodifferential operators. Integral Equations and Operator Theory, 1999, 34, 439-457.	0.8	148
7	Wiener's lemma for twisted convolution and Gabor frames. Journal of the American Mathematical Society, 2003, 17, 1-18.	3.9	148
8	A discrete theory of irregular sampling. Linear Algebra and Its Applications, 1993, 193, 129-150.	0.9	144
9	Beurling-Landau-type theorems for non-uniform sampling in shift invariant spline spaces. Journal of Fourier Analysis and Applications, 2000, 6, 93-103.	1.0	126
10	Time-Frequency Analysis of Sjöstrand's Class. Revista Matematica Iberoamericana, 2006, 22, 703-724.	0.9	120
11	Random Sampling of Multivariate Trigonometric Polynomials. SIAM Journal on Mathematical Analysis, 2005, 36, 773-795.	1.9	117
12	Spaces of Test Functions via the STFT. Journal of Function Spaces and Applications, 2004, 2, 25-53.	0.5	98
13	Symmetry and inverse-closedness of matrix algebras and functional calculus for infinite matrices. Transactions of the American Mathematical Society, 2006, 358, 2695-2711.	0.9	89
14	Irregular sampling theorems and series expansions of band-limited functions. Journal of Mathematical Analysis and Applications, 1992, 167, 530-556.	1.0	87
15	Distributed Field Reconstruction in Wireless Sensor Networks Based on Hybrid Shift-Invariant Spaces. IEEE Transactions on Signal Processing, 2012, 60, 5426-5439.	5.3	82
16	Gabor (super)frames with Hermite functions. Mathematische Annalen, 2009, 345, 267-286.	1.4	80
17	Intrinsic Localization of Frames. Constructive Approximation, 2005, 22, 395-415.	3.0	77
18	Analysis, Optimization, and Implementation of Low-Interference Wireless Multicarrier Systems. IEEE Transactions on Wireless Communications, 2007, 6, 1921-1931.	9.2	73

#	ARTICLE	IF	CITATIONS
19	Generalized Anti-Wick Operators with Symbols in Distributional Sobolev spaces. Integral Equations and Operator Theory, 2004, 48, 427-442.	0.8	72
20	Convergence Analysis of the Finite Section Method and Banach Algebras of Matrices. Integral Equations and Operator Theory, 2010, 67, 183-202.	0.8	68
21	Gabor frames and totally positive functions. Duke Mathematical Journal, 2013, 162, .	1.5	67
22	Hardy's Theorem and the Short-Time Fourier Transform of Schwartz Functions. Journal of the London Mathematical Society, 2001, 63, 205-214.	1.0	66
23	Banach algebras of pseudodifferential operators and their almost diagonalization. Annales De L'Institut Fourier, 2008, 58, 2279-2314.	0.6	57
24	Irregular sampling of wavelet and short-time Fourier transforms. Constructive Approximation, 1993, 9, 283-297.	3.0	55
25	Localized Frames Are Finite Unions of Riesz Sequences. Advances in Computational Mathematics, 2003, 18, 149-157.	1.6	51
26	Wiener algebras of Fourier integral operators. Journal Des Mathematiques Pures Et Appliquees, 2013, 99, 219-233.	1.6	50
27	On accumulated spectrograms. Transactions of the American Mathematical Society, 2015, 368, 3629-3649.	0.9	47
28	Noncommutative Approximation: Inverse-Closed Subalgebras and Off-Diagonal Decay of Matrices. Constructive Approximation, 2010, 32, 429-466.	3.0	46
29	Pseudospectral Fourier reconstruction with the modified Inverse Polynomial Reconstruction Method. Journal of Computational Physics, 2010, 229, 933-946.	3.8	45
30	Irregular sampling, Toeplitz matrices, and the approximation of entire functions of exponential type. Mathematics of Computation, 1999, 68, 749-766.	2.1	43
31	The Balian–Low theorem for symplectic lattices in higher dimensions. Applied and Computational Harmonic Analysis, 2002, 13, 169-176.	2.2	43
32	Sampling theorems for shift-invariant spaces, Gabor frames, and totally positive functions. Inventiones Mathematicae, 2018, 211, 1119-1148.	2.5	43
33	The Mystery of Gabor Frames. Journal of Fourier Analysis and Applications, 2014, 20, 865-895.	1.0	39
34	Error analysis in regular and irregular sampling theory. Applicable Analysis, 1993, 50, 167-189.	1.3	35
35	Composition and spectral invariance of pseudodifferential Operators on Modulation Spaces. Journal D'Analyse Mathematique, 2006, 98, 65-82.	0.8	35
36	Deformation of Gabor systems. Advances in Mathematics, 2015, 277, 388-425.	1.1	35

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37	Generalized metaplectic operators and the Schrödinger equation with a potential in the Sjöstrand class. Journal of Mathematical Physics, 2014, 55, .	1.1	34
38	Compact open sets in duals and projections in <i>L</i>¹-algebras of certain semi-direct product groups. Mathematical Proceedings of the Cambridge Philosophical Society, 1992, 111, 545-556.	0.4	33
39	Wiener's Lemma: Theme and Variations. An Introduction to Spectral Invariance and Its Applications. Applied and Numerical Harmonic Analysis, 2010, , 175-234.	0.3	32
40	Time-frequency partitions for the Gelfand triple (S_0,L^2,S_0'). Mathematica Scandinavica, 2006, 98, 81.	0.2	32
41	Localization of frames II. Applied and Computational Harmonic Analysis, 2004, 17, 29-47.	2.2	31
42	Necessary conditions for Schatten class localization operators. Proceedings of the American Mathematical Society, 2005, 133, 3573-3579.	0.8	31
43	Low-Complexity ICI/ISI Equalization in Doubly Dispersive Multicarrier Systems Using a Decision-Feedback LSQR Algorithm. IEEE Transactions on Signal Processing, 2011, 59, 2432-2436.	5.3	31
44	Banach Gabor frames with Hermite functions: polyanalytic spaces from the Heisenberg group. Applicable Analysis, 2012, 91, 1981-1997.	1.3	30
45	Density of sampling and interpolation in reproducing kernel Hilbert spaces. Journal of the London Mathematical Society, 2017, 96, 663-686.	1.0	30
46	Isomorphism properties of Toeplitz operators and pseudo-differential operators between modulation spaces. Journal D'Analyse Mathematique, 2011, 114, 255-283.	0.8	29
47	Approximation of Fourier Integral Operators by Gabor Multipliers. Journal of Fourier Analysis and Applications, 2012, 18, 661-684.	1.0	29
48	Random sampling of bandlimited functions. Israel Journal of Mathematics, 2010, 177, 1-28.	0.8	28
49	Gabor Analysis in Weighted Amalgam Spaces. Sampling Theory in Signal and Information Processing, 2002, 1, 225-259.	0.2	28
50	Gabor frames with Hermite functions. Comptes Rendus Mathematique, 2007, 344, 157-162.	0.3	27
51	Relevant sampling of band-limited functions. Illinois Journal of Mathematics, 2013, 57, .	0.1	25
52	Symbolic Calculus and Fredholm Property for Localization Operators. Journal of Fourier Analysis and Applications, 2006, 12, 371-392.	1.0	24
53	A new approach to interpolating scaling functions. Applicable Analysis, 1999, 72, 485-500.	1.3	23
54	SYMMETRY OF WEIGHTED $L{uppercase{ootnotesize{L^1}}}$-ALGEBRAS AND THE GRS-CONDITION. Bulletin of the London Mathematical Society, 2006, 38, 625-635.	0.8	23

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55	On minimal trajectories for mobile sampling of bandlimited fields. Applied and Computational Harmonic Analysis, 2015, 39, 487-510.	2.2	23
56	Convolution-Dominated Operators on Discrete Groups. Integral Equations and Operator Theory, 2008, 61, 493-509.	0.8	17
57	A Pedestrian's Approach to Pseudodifferential Operators. , 2006, , 139-169.		17
58	Pseudodifferential operators on locally compact abelian groups and Sjöstrand's symbol class. Journal Fur Die Reine Und Angewandte Mathematik, 2007, 2007, .	0.9	16
59	Landau's necessary density conditions for LCA groups. Journal of Functional Analysis, 2008, 255, 1831-1850.	1.4	16
60	Multivariate Gabor frames and sampling of entire functions of several variables. Applied and Computational Harmonic Analysis, 2011, 31, 218-227.	2.2	16
61	Backward continued fractions, Hecke groups and invariant measures for transformations of the interval. Ergodic Theory and Dynamical Systems, 1996, 16, 1241-1274.	0.6	15
62	Time–Frequency Localization Operators and a Berezin Transform. Integral Equations and Operator Theory, 2015, 82, 95-117.	0.8	14
63	Sharp Results on Sampling with Derivatives in Shift-Invariant Spaces and Multi-Window Gabor Frames. Constructive Approximation, 2020, 51, 1-25.	3.0	14
64	Norm-controlled inversion in smooth Banach algebras, I. Journal of the London Mathematical Society, 2013, 88, 49-64.	1.0	13
65	Sampling, Marcinkiewicz–Zygmund inequalities, approximation, and quadrature rules. Journal of Approximation Theory, 2020, 257, 105455.	0.8	13
66	Phase-Retrieval in Shift-Invariant Spaces with Gaussian Generator. Journal of Fourier Analysis and Applications, 2020, 26, 1.	1.0	13
67	Optimal adaptive computations in the Jaffard algebra and localized frames. Journal of Approximation Theory, 2010, 162, 153-185.	0.8	12
68	Time-frequency partitions and characterizations of modulation spaces with localization operators. Journal of Functional Analysis, 2011, 260, 1903-1924.	1.4	12
69	Representation and approximation of pseudodifferential operators by sums of Gabor multipliers. Applicable Analysis, 2011, 90, 385-401.	1.3	12
70	Gabor Frames without Inequalities. International Mathematics Research Notices, 2007, 2007, .	1.0	11
71	LSQR-based ICI equalization for multicarrier communications in strongly dispersive and highly mobile environments. , 2007, , .		11
72	Frame constants of Gabor frames near the critical density. Journal Des Mathematiques Pures Et Appliquees, 2010, 94, 170-182.	1.6	11

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73	Discretized Gabor Frames of Totally Positive Functions. IEEE Transactions on Information Theory, 2014, 60, 159-169.	2.4	11
74	Orthonormal bases in the orbit of square-integrable representations of nilpotent Lie groups. Journal of Functional Analysis, 2018, 275, 3338-3379.	1.4	11
75	Harmonic Analysis in Phase Space and Finite Weyl–Heisenberg Ensembles. Journal of Statistical Physics, 2019, 174, 1104-1136.	1.2	11
76	Zeros of the Wigner distribution and the short-time Fourier transform. Revista Matematica Complutense, 2020, 33, 723-744.	1.2	11
77	The Homogeneous Approximation Property and the Comparison Theorem for Coherent Frames. Sampling Theory in Signal and Information Processing, 2008, 7, 271-279.	0.2	11
78	Norm€controlled inversion in smooth Banach algebras, II. Mathematische Nachrichten, 2014, 287, 917-937.	0.8	9
79	Linear independence of time-frequency shifts?. Monatshefte Fur Mathematik, 2015, 177, 67-77.	0.9	9
80	What Is Variable Bandwidth?. Communications on Pure and Applied Mathematics, 2017, 70, 2039-2083.	3.1	9
81	Sampling the Flow of a Bandlimited Function. Journal of Geometric Analysis, 2021, 31, 9241-9275.	1.0	9
82	LOCALIZATION OPERATORS AND TIME-FREQUENCY ANALYSIS. , 2007, , 83-110.		9
83	Implementation of Discretized Gabor Frames and Their Duals. IEEE Transactions on Information Theory, 2016, 62, 2759-2771.	2.4	8
84	Stability of Gabor Frames Under Small Time Hamiltonian Evolutions. Letters in Mathematical Physics, 2016, 106, 799-809.	1.1	8
85	Completeness of Gabor systems. Journal of Approximation Theory, 2016, 207, 283-300.	0.8	8
86	Strict density inequalities for sampling and interpolation in weighted spaces of holomorphic functions. Journal of Functional Analysis, 2019, 277, 108282.	1.4	8
87	THE CRAMÉR–WOLD THEOREM ON QUADRATIC SURFACES AND HEISENBERG UNIQUENESS PAIRS. Journal of the Institute of Mathematics of Jussieu, 2020, 19, 117-135.	0.7	8
88	A Guide to Localized Frames and Applications to Galerkin-Like Representations of Operators. Applied and Numerical Harmonic Analysis, 2017, , 47-79.	0.3	8
89	Balian–Low Type Theorems on Homogeneous Groups. Analysis Mathematica, 2020, 46, 483-515.	0.5	7
90	Gabor Frames: Characterizations and Coarse Structure. Applied and Numerical Harmonic Analysis, 2019, , 93-120.	0.3	7

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91	Backward Continued Fractions and their Invariant Measures. Canadian Mathematical Bulletin, 1996, 39, 186-198.	0.5	7
92	Sequential LSQR-based ICI equalization and decision-feedback ISI cancellation in pulse-shaped multicarrier systems. , 2009, , .		6
93	Uniqueness and reconstruction theorems for pseudodifferential operators with a bandlimited Kohn-Nirenberg symbol. Advances in Computational Mathematics, 2014, 40, 49-63.	1.6	6
94	Non-Uniform Sampling in Higher Dimensions: From Trigonometric Polynomials to Bandlimited Functions. , 2001, , 155-171.		5
95	On the Product of Localization Operators. , 2006, , 279-295.		5
96	Sampling and Reconstruction in Distinct Subspaces Using Oblique Projections. Journal of Fourier Analysis and Applications, 2019, 25, 1080-1112.	1.0	4
97	Sampling of entire functions of several complex variables on a lattice and multivariate Gabor frames. Complex Variables and Elliptic Equations, 2020, 65, 1717-1735.	0.8	3
98	Marcinkiewiczâ€"Zygmund Inequalities for Polynomials in Bergman and Hardy Spaces. Journal of Geometric Analysis, 2021, 31, 7595-7619.	1.0	3
99	From Heisenberg uniqueness pairs to properties of the Helmholtz and Laplace equations. Journal of Mathematical Analysis and Applications, 2019, 469, 202-219.	1.0	2
100	Complete interpolating sequences for the Gaussian shift-invariant space. Applied and Computational Harmonic Analysis, 2022, 61, 191-201.	2.2	2
101	A new concept of variable bandwidth. , 2017, , .		1
102	Determining point distributions from their projections. , 2017, , .		1
103	Mobile sampling of bandlimited fields. , 2015, , .		0
104	Sharp sampling theorems in shift-invariant spaces. , 2017, , .		0