Karlheinz Grchenig

List of Publications by Citations

102 papers	4,375 citations	31 h-index	64 g-index
107 ext. papers	5,049 ext. citations	1.4 avg, IF	6.15 L-index

#	Paper	IF	Citations
102	Foundations of Time-Frequency Analysis. *Applied and Numerical Harmonic Analysis*, **2001**,	0.6	1054
101	Nonuniform Sampling and Reconstruction in Shift-Invariant Spaces. *SIAM Review*, **2001**, 43, 585-620	7.4	471
100	Time-Frequency analysis of localization operators. *Journal of Functional Analysis*, **2003**, 205, 107-131	1.4	153
99	Reconstruction Algorithms in Irregular Sampling. *Mathematics of Computation*, **1992**, 59, 181	1.6	146
98	Localization of Frames, Banach Frames, and the Invertibility of the Frame Operator. *Journal of Fourier Analysis and Applications*, **2004**, 10, 105-132	1.1	126
97	Modulation spaces and pseudodifferential operators. *Integral Equations and Operator Theory*, **1999**, 34, 439-457	0.5	111
96	Beurling-Landau-type theorems for non-uniform sampling in shift invariant spline spaces. *Journal of Fourier Analysis and Applications*, **2000**, 6, 93-103	1.1	104
95	Wiener's lemma for twisted convolution and Gabor frames. *Journal of the American Mathematical Society*, **2003**, 17, 1-18	1.6	99
94	Time-Frequency Analysis of Sjöstrand's Class. *Revista Matematica Iberoamericana*, **2006**, 703-724	1.2	95
93	A discrete theory of irregular sampling. *Linear Algebra and Its Applications*, **1993**, 193, 129-150	0.9	91
92	Symmetry and inverse-closedness of matrix algebras and functional calculus for infinite matrices. *Transactions of the American Mathematical Society*, **2006**, 358, 2695-2711	1	75
91	Irregular sampling theorems and series expansions of band-limited functions. *Journal of Mathematical Analysis and Applications*, **1992**, 167, 530-556	1.1	74
90	Random Sampling of Multivariate Trigonometric Polynomials. *SIAM Journal on Mathematical Analysis*, **2005**, 36, 773-795	1.7	73
89	Intrinsic Localization of Frames. *Constructive Approximation*, **2005**, 22, 395-415	1.6	64
88	Spaces of Test Functions via the STFT. *Journal of Function Spaces and Applications*, **2004**, 2, 25-53		63
87	Gabor (super)frames with Hermite functions. *Mathematische Annalen*, **2009**, 345, 267-286	1	61
86	Distributed Field Reconstruction in Wireless Sensor Networks Based on Hybrid Shift-Invariant Spaces. *IEEE Transactions on Signal Processing*, **2012**, 60, 5426-5439	4.8	55

85	Convergence Analysis of the Finite Section Method and Banach Algebras of Matrices. *Integral Equations and Operator Theory*, **2010**, 67, 183-202	0.5	55
84	Generalized Anti-Wick Operators with Symbols in Distributional Sobolev spaces. *Integral Equations and Operator Theory*, **2004**, 48, 427-442	0.5	50
83	Analysis, Optimization, and Implementation of Low-Interference Wireless Multicarrier Systems. *IEEE Transactions on Wireless Communications*, **2007**, 6, 1921-1931	9.6	49
82	Hardy's Theorem and the Short-Time Fourier Transform of Schwartz Functions. *Journal of the London Mathematical Society*, **2001**, 63, 205-214	0.7	49
81	Gabor frames and totally positive functions. *Duke Mathematical Journal*, **2013**, 162,	1.9	48
80	Irregular sampling of wavelet and short-time Fourier transforms. *Constructive Approximation*, **1993**, 9, 283-297	1.6	47
79	Banach algebras of pseudodifferential operators and their almost diagonalization. *Annales De L(instit Fourier*, **2008**, 58, 2279-2314	0.5	43
78	Weight functions in time-frequency analysis **2007**, 343-366		41
77	Localized Frames Are Finite Unions of Riesz Sequences. *Advances in Computational Mathematics*, **2003**, 18, 149-157	1.6	39
76	Irregular sampling, Toeplitz matrices, and the approximation of entire functions of exponential type. *Mathematics of Computation*, **1999**, 68, 749-766	1.6	39
75	Wiener algebras of Fourier integral operators. *Journal Des Mathematiques Pures Et Appliquees*, **2013**, 99, 219-233	1.7	38
74	Pseudospectral Fourier reconstruction with the modified Inverse Polynomial Reconstruction Method. *Journal of Computational Physics*, **2010**, 229, 933-946	4.1	38
73	Noncommutative Approximation: Inverse-Closed Subalgebras and Off-Diagonal Decay of Matrices. *Constructive Approximation*, **2010**, 32, 429-466	1.6	37
72	The Balian(ow theorem for symplectic lattices in higher dimensions. *Applied and Computational Harmonic Analysis*, **2002**, 13, 169-176	3.1	34
71	The Mystery of Gabor Frames. *Journal of Fourier Analysis and Applications*, **2014**, 20, 865-895	1.1	29
70	Generalized metaplectic operators and the Schr(dinger equation with a potential in the Sj(strand class. *Journal of Mathematical Physics*, **2014**, 55, 081506	1.2	29
69	Deformation of Gabor systems. *Advances in Mathematics*, **2015**, 277, 388-425	1.3	28
68	On accumulated spectrograms. *Transactions of the American Mathematical Society*, **2015**, 368, 3629-3649	1	27

67	Composition and spectral invariance of pseudodifferential Operators on Modulation Spaces. *Journal D'Analyse Mathematique*, **2006**, 98, 65-82	0.8	27
66	Necessary conditions for Schatten class localization operators. *Proceedings of the American Mathematical Society*, **2005**, 133, 3573-3579	0.8	27
65	Error analysis in regular and irregular sampling theory. *Applicable Analysis*, **1993**, 50, 167-189	0.8	27
64	Localization of frames II. *Applied and Computational Harmonic Analysis*, **2004**, 17, 29-47	3.1	26
63	Time-frequency partitions for the Gelfand triple (S_0,L^2,S_0'). *Mathematica Scandinavica*, **2006**, 98, 81	0.8	26
62	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	4.8	24
61	Gabor frames with Hermite functions. *Comptes Rendus Mathematique*, **2007**, 344, 157-162	0.4	24
60	Isomorphism properties of Toeplitz operators and pseudo-differential operators between modulation spaces. *Journal D'Analyse Mathematique*, **2011**, 114, 255-283	0.8	23
59	Approximation of Fourier Integral Operators by Gabor Multipliers. *Journal of Fourier Analysis and Applications*, **2012**, 18, 661-684	1.1	22
58	Banach Gabor frames with Hermite functions: polyanalytic spaces from the Heisenberg group. *Applicable Analysis*, **2012**, 91, 1981-1997	0.8	22
57	Wiener's Lemma: Theme and Variations. An Introduction to Spectral Invariance and Its Applications. *Applied and Numerical Harmonic Analysis*, **2010**, 175-234	0.6	22
56	Sampling theorems for shift-invariant spaces, Gabor frames, and totally positive functions. *Inventiones Mathematicae*, **2018**, 211, 1119-1148	2.2	21
55	Compact open sets in duals and projections in L1-algebras of certain semi-direct product groups. *Mathematical Proceedings of the Cambridge Philosophical Society*, **1992**, 111, 545-556	0.7	21
54	Density of sampling and interpolation in reproducing kernel Hilbert spaces. *Journal of the London Mathematical Society*, **2017**, 96, 663-686	0.7	20
53	Symmetry of Weighted L1-Algebras and the GRS-Condition. *Bulletin of the London Mathematical Society*, **2006**, 38, 625-635	0.9	20
52	Relevant sampling of band-limited functions. *Illinois Journal of Mathematics*, **2013**, 57,	0.9	19
51	A new approach to interpolating scaling functions. *Applicable Analysis*, **1999**, 72, 485-500	0.8	19
50	Gabor Analysis in Weighted Amalgam Spaces. *Sampling Theory in Signal and Information Processing*, **2002**, 1, 225-259	0.5	19

49	Symbolic Calculus and Fredholm Property for Localization Operators. *Journal of Fourier Analysis and Applications*, **2006**, 12, 371-392	1.1	18
48	On minimal trajectories for mobile sampling of bandlimited fields. *Applied and Computational Harmonic Analysis*, **2015**, 39, 487-510	3.1	15
47	Random sampling of bandlimited functions. *Israel Journal of Mathematics*, **2010**, 177, 1-28	0.8	14
46	Landau's necessary density conditions for LCA groups. *Journal of Functional Analysis*, **2008**, 255, 1831-1850	1.4	14
45	Convolution-Dominated Operators on Discrete Groups. *Integral Equations and Operator Theory*, **2008**, 61, 493-509	0.5	13
44	A Pedestrian Approach to Pseudodifferential Operators **2006**, 139-169		13
43	Norm-controlled inversion in smooth Banach algebras, I. *Journal of the London Mathematical Society*, **2013**, 88, 49-64	0.7	11
42	Backward continued fractions, Hecke groups and invariant measures for transformations of the interval. *Ergodic Theory and Dynamical Systems*, **1996**, 16, 1241-1274	0.9	11
41	Time-Frequency Localization Operators and a Berezin Transform. *Integral Equations and Operator Theory*, **2015**, 82, 95-117	0.5	10
40	Representation and approximation of pseudodifferential operators by sums of Gabor multipliers. *Applicable Analysis*, **2011**, 90, 385-401	0.8	10
39	Gabor Frames without Inequalities. *International Mathematics Research Notices*, **2007**, 2007,	0.8	10
38	Multivariate Gabor frames and sampling of entire functions of several variables. *Applied and Computational Harmonic Analysis*, **2011**, 31, 218-227	3.1	9
37	Optimal adaptive computations in the Jaffard algebra and localized frames. *Journal of Approximation Theory*, **2010**, 162, 153-185	0.9	9
36	LSQR-based ICI equalization for multicarrier communications in strongly dispersive and highly mobile environments **2007**,		9
35	Harmonic Analysis in Phase Space and Finite Weyl-Heisenberg Ensembles. *Journal of Statistical Physics*, **2019**, 174, 1104-1136	1.5	8
34	Linear independence of time-frequency shifts?. *Monatshefte Fur Mathematik*, **2015**, 177, 67-77	0.7	8
33	Discretized Gabor Frames of Totally Positive Functions. *IEEE Transactions on Information Theory*, **2014**, 60, 159-169	2.8	8
32	Time-frequency partitions and characterizations of modulation spaces with localization operators. *Journal of Functional Analysis*, **2011**, 260, 1903-1924	1.4	8

31	Frame constants of Gabor frames near the critical density. *Journal Des Mathematiques Pures Et Appliquees*, **2010**, 94, 170-182	1.7	8
30	The Homogeneous Approximation Property and the Comparison Theorem for Coherent Frames. *Sampling Theory in Signal and Information Processing*, **2008**, 7, 271-279	0.5	8
29	Stability of Gabor Frames Under Small Time Hamiltonian Evolutions. *Letters in Mathematical Physics* , **2016**, 106, 799-809	1.2	7
28	Norm-controlled inversion in smooth Banach algebras, II. *Mathematische Nachrichten*, **2014**, 287, 917-937	0.8	7
27	Pseudodifferential operators on locally compact abelian groups and Sjöstrand's symbol class. *Journal Fur Die Reine Und Angewandte Mathematik*, **2007**, 2007,	1.2	7
26	LOCALIZATION OPERATORS AND TIME-FREQUENCY ANALYSIS **2007**, 83-110		7
25	Zeros of the Wigner distribution and the short-time Fourier transform. *Revista Matematica Complutense*, **2020**, 33, 723-744	0.8	7
24	Orthonormal bases in the orbit of square-integrable representations of nilpotent Lie groups. *Journal of Functional Analysis*, **2018**, 275, 3338-3379	1.4	7
23	Implementation of Discretized Gabor Frames and Their Duals. *IEEE Transactions on Information Theory*, **2016**, 62, 2759-2771	2.8	6
22	THE CRAMÉR-WOLD THEOREM ON QUADRATIC SURFACES AND HEISENBERG UNIQUENESS PAIRS. *Journal of the Institute of Mathematics of Jussieu*, **2020**, 19, 117-135	0.6	6
21	Phase-Retrieval in Shift-Invariant Spaces with Gaussian Generator. *Journal of Fourier Analysis and Applications*, **2020**, 26, 1	1.1	5
20	Completeness of Gabor systems. *Journal of Approximation Theory*, **2016**, 207, 283-300	0.9	5
19	Uniqueness and reconstruction theorems for pseudodifferential operators with a bandlimited Kohn-Nirenberg symbol. *Advances in Computational Mathematics*, **2014**, 40, 49-63	1.6	5
18	Sequential LSQR-based ICI equalization and decision-feedback ISI cancellation in pulse-shaped multicarrier systems **2009**,		5
17	Backward Continued Fractions and their Invariant Measures. *Canadian Mathematical Bulletin*, **1996**, 39, 186-198	0.6	5
16	A Guide to Localized Frames and Applications to Galerkin-Like Representations of Operators. *Applied and Numerical Harmonic Analysis*, **2017**, 47-79	0.6	5
15	Sharp Results on Sampling with Derivatives in Shift-Invariant Spaces and Multi-Window Gabor Frames. *Constructive Approximation*, **2020**, 51, 1-25	1.6	5
14	Strict density inequalities for sampling and interpolation in weighted spaces of holomorphic functions. *Journal of Functional Analysis*, **2019**, 277, 108282	1.4	4

LIST OF PUBLICATIONS

13	Sampling, Marcinkiewicz Zygmund inequalities, approximation, and quadrature rules. *Journal of Approximation Theory*, **2020**, 257, 105455	0.9	4
12	Balian Low Type Theorems on Homogeneous Groups. *Analysis Mathematica*, **2020**, 46, 483-515	0.5	4
11	Non-Uniform Sampling in Higher Dimensions: From Trigonometric Polynomials to Bandlimited Functions **2001**, 155-171		4
10	What Is Variable Bandwidth?. *Communications on Pure and Applied Mathematics*, **2017**, 70, 2039-2083	2.5	3
9	On the Product of Localization Operators **2006**, 279-295		2
8	From Heisenberg uniqueness pairs to properties of the Helmholtz and Laplace equations. *Journal of Mathematical Analysis and Applications*, **2019**, 469, 202-219	1.1	2
7	Sampling the Flow of a Bandlimited Function. *Journal of Geometric Analysis*, **2021**, 31, 9241-9275	0.9	2
6	Gabor Frames: Characterizations and Coarse Structure. *Applied and Numerical Harmonic Analysis*, **2019**, 93-120	0.6	1
5	Sampling of entire functions of several complex variables on a lattice and multivariate Gabor frames. *Complex Variables and Elliptic Equations*, **2020**, 65, 1717-1735	0.5	1
4	Sampling and Reconstruction in Distinct Subspaces Using Oblique Projections. *Journal of Fourier Analysis and Applications*, **2019**, 25, 1080-1112	1.1	1
3	Marcinkiewicz Zygmund Inequalities for Polynomials in Bergman and Hardy Spaces. *Journal of Geometric Analysis*, **2021**, 31, 7595-7619	0.9	0
2	Shift-Invariant Spaces of Entire Functions. *Trends in Mathematics*, **2021**, 81-87	0.3	
1	Totally Positive Functions in Sampling Theory and Time-Frequency Analysis. *Springer Proceedings in Mathematics and Statistics*, **2022**, 51-73	0.2	