Achim Kempf

List of Publications by Citations

92 papers	4,165 citations	27 h-index	64 g-index
98 ext. papers	4,738 ext. citations	3.5 avg, IF	5.9 L-index

#	Paper	IF	Citations
92	Hilbert space representation of the minimal length uncertainty relation. *Physical Review D*, **1995**, 52, 1108-1118	4.9	1157
91	Non-pointlike particles in harmonic oscillators. *Journal of Physics A*, **1997**, 30, 2093-2101		344
90	Minimal length uncertainty relation and ultraviolet regularization. *Physical Review D*, **1997**, 55, 7909-7920	4.9	283
89	Uncertainty relation in quantum mechanics with quantum group symmetry. *Journal of Mathematical Physics*, **1994**, 35, 4483-4496	1.2	278
88	Perturbation spectrum in inflation with a cutoff. *Physical Review D*, **2001**, 64,	4.9	179
87	Maximal localization in the presence of minimal uncertainties in positions and in momenta. *Journal of Mathematical Physics*, **1996**, 37, 2121-2137	1.2	174
86	Mode generating mechanism in inflation with a cutoff. *Physical Review D*, **2001**, 63,	4.9	170
85	On quantum field theory with nonzero minimal uncertainties in positions and momenta. *Journal of Mathematical Physics*, **1997**, 38, 1347-1372	1.2	104
84	Fundamental quantum optics experiments conceivable with satellites—reaching relativistic distances and velocities. *Classical and Quantum Gravity*, **2012**, 29, 224011	3.3	90
83	Casimir forces on atoms in optical cavities. *Physical Review A*, **2014**, 89,	2.6	64
82	Black holes, bandwidths and Beethoven. *Journal of Mathematical Physics*, **2000**, 41, 2360-2374	1.2	64
81	Minimum length cutoff in inflation and uniqueness of the action. *Physical Review D*, **2005**, 71,	4.9	61
80	Unusual properties of superoscillating particles. *Journal of Physics A*, **2004**, 37, 12067-12076		61
79	Roadmap on superoscillations. *Journal of Optics (United Kingdom)*, **2019**, 21, 053002	1.7	59
78	Sustainable entanglement production from a quantum field. *Physical Review A*, **2013**, 88,	2.6	55
77	Algebraic q-integration and Fourier theory on quantum and braided spaces. *Journal of Mathematical Physics*, **1994**, 35, 6802-6837	1.2	52
76	Generalized uncertainty principles and localization of a particle in discrete space. *Physical Review D*, **2012**, 86,	4.9	50

75	Fields over unsharp coordinates. *Physical Review Letters*, **2000**, 85, 2873-6	7.4	49
74	Generalization of quantum error correction via the Heisenberg picture. *Physical Review Letters*, **2007**, 98, 100502	7.4	46
73	Information transmission without energy exchange. *Physical Review Letters*, **2015**, 114, 110505	7.4	41
72	Processing quantum information with relativistic motion of atoms. *Physical Review Letters*, **2013**, 110, 160501	7.4	39
71	Spacetime could be simultaneously continuous and discrete, in the same way that information can be. *New Journal of Physics*, **2010**, 12, 115001	2.9	36
70	Covariant information-density cutoff in curved space-time. *Physical Review Letters*, **2004**, 92, 221301	7.4	35
69	Noncommutative geometric regularization. *Physical Review D*, **1996**, 54, 5174-5178	4.9	35
68	Quantum signaling in cavity QED. *Physical Review A*, **2014**, 89,	2.6	31
67	Quantum error correction of observables. *Physical Review A*, **2007**, 76,	2.6	29
66	Quantum group-symmetric fock spaces with bargmann-fock representation. *Letters in Mathematical Physics*, **1992**, 26, 1-12	1.2	29
65	Information-theoretic natural ultraviolet cutoff for spacetime. *Physical Review Letters*, **2009**, 103, 231301	7.4	25
64	Renormalized Unruh-DeWitt particle detector models for boson and fermion fields. *Physical Review D*, **2016**, 93,	4.9	24
63	Quantum group symmetric Bargmann-Fock space: Integral kernels, Green functions, driving forces. *Journal of Mathematical Physics*, **1993**, 34, 969-987	1.2	23
62	Exact solution of inflationary model with minimum length. *Physical Review D*, **2006**, 74,	4.9	22
61	Analysis of superoscillatory wave functions. *Journal of Mathematical Physics*, **2005**, 46, 012101	1.2	22
60	Information theory, spectral geometry, and quantum gravity. *Physical Review Letters*, **2008**, 100, 021304	7.4	20
59	Chain termination codons and polymerase-induced frameshift mutations. *FEBS Letters*, **1997**, 419, 153-6	3.8	18
58	Quantum seismology. *New Journal of Physics*, **2014**, 16, 105020	2.9	17

57	Four aspects of superoscillations. *Quantum Studies: Mathematics and Foundations*, **2018**, 5, 477-484	0.6	16
56	Fields with finite information density. *Physical Review D*, **2004**, 69,	4.9	16
55	Locality and entanglement in bandlimited quantum field theory. *Physical Review D*, **2015**, 92,	4.9	15
54	Shape from sound: toward new tools for quantum gravity. *Physical Review Letters*, **2013**, 110, 121301	7.4	15
53	Perfect Zeno-like effect through imperfect measurements at a finite frequency. *Physical Review A*, **2015**, 91,	2.6	14
52	Universal scheme for indirect quantum control. *Physical Review A*, **2016**, 93,	2.6	14
51	Quantum groups and quantum field theory with nonzero minimal uncertainties in positions and momenta. *European Physical Journal D*, **1994**, 44, 1041-1048		13
50	Correlation-Enhanced Algorithmic Cooling. *Physical Review Letters*, **2017**, 119, 050502	7.4	12
49	Quantum error correction on infinite-dimensional Hilbert spaces. *Journal of Mathematical Physics*, **2009**, 50, 062108	1.2	12
48	Unsharp degrees of freedom and the generating of symmetries. *Physical Review D*, **2000**, 63,	4.9	12
47	On the three short-distance structures which can be described by linear operators. *Reports on Mathematical Physics*, **1999**, 43, 171-177	0.8	12
46	New methods for creating superoscillations. *Journal of Physics A: Mathematical and Theoretical*, **2016**, 49, 505203	2	12
45	Coherent delocalization in the light-matter interaction. *Physical Review D*, **2020**, 101,	4.9	11
44	Asymptotically limitless quantum energy teleportation via qudit probes. *Physical Review A*, **2016**, 93,	2.6	10
43	New Dirac delta function based methods with applications to perturbative expansions in quantum field theory. *Journal of Physics A: Mathematical and Theoretical*, **2014**, 47, 415204	2	10
42	Towards spectral geometric methods for Euclidean quantum gravity. *Physical Review D*, **2016**, 93,	4.9	9
41	Natural Covariant Planck Scale Cutoffs and the Cosmic Microwave Background Spectrum. *Physical Review Letters*, **2017**, 119, 031301	7.4	9
40	Transmitting qubits through relativistic fields. *Journal of Physics A: Mathematical and Theoretical*, **2018**, 51, 485301	2	9

39	Communication through quantum fields near a black hole. *Physical Review D*, **2020**, 101,	4.9	8
38	Quantum Gravity, Information Theory and the CMB. *Foundations of Physics*, **2018**, 48, 1191-1203	1.2	8
37	Spacetime curvature in terms of scalar field propagators. *Physical Review D*, **2016**, 93,	4.9	8
36	Driving quantum systems with superoscillations. *Journal of Mathematical Physics*, **2017**, 58, 082101	1.2	8
35	How to (path-) integrate by differentiating. *Journal of Physics: Conference Series*, **2015**, 626, 012015	0.3	7
34	Transmission of quantum information through quantum fields. *Physical Review D*, **2020**, 101,	4.9	7
33	Quantum Gravity on a Quantum Computer?. *Foundations of Physics*, **2014**, 44, 472-482	1.2	7
32	Towards spectral geometry for causal sets. *Classical and Quantum Gravity*, **2017**, 34, 094001	3.3	6
31	Scaling properties of superoscillations and the extension to periodic signals. *Journal of Physics A: Mathematical and Theoretical*, **2016**, 49, 335202	2	6
30	On the Casimir effect in the high-Tccuprates. *Journal of Physics A: Mathematical and Theoretical*, **2008**, 41, 164038	2	6
29	Neural networks can learn to utilize correlated auxiliary noise. *Scientific Reports*, **2021**, 11, 21624	4.9	6
28	A classification of open Gaussian dynamics. *Journal of Physics A: Mathematical and Theoretical*, **2018**, 51, 245301	2	6
27	Gaussian ancillary bombardment. *Physical Review A*, **2018**, 97,	2.6	6
26	On a Non-Fourier Generalization of Shannon Sampling Theory **2007**,		5
25	Sub-Hopf-algebra-induced twists of quantum enveloping algebras. *Journal of Mathematical Physics*, **1994**, 35, 1931-1938	1.2	5
24	Integration by differentiation: new proofs, methods and examples. *Journal of Physics A: Mathematical and Theoretical*, **2017**, 50, 235201	2	4
23	On the Unruh effect, trajectories and information. *Classical and Quantum Gravity*, **2018**, 35, 184002	3.3	4
22	Purified discord and multipartite entanglement. *Annals of Physics*, **2013**, 337, 153-162	2.5	4

No.	Title		
21	On the stability of a generalized Shannon sampling theorem **2008**,		4
20	Corrections to the emergent canonical commutation relations arising in the statistical mechanics of matrix models. *Journal of Mathematical Physics*, **1998**, 39, 5083-5097	1.2	4
19	Approximation of Bandlimited Functions on a Non-Compact Manifold by Bandlimited Functions on Compact Submanifolds. *Sampling Theory in Signal and Information Processing*, **2008**, 7, 281-292	0.5	4
18	Duality in the dynamics of Unruh-DeWitt detectors in conformally related spacetimes. *Physical Review D*, **2020**, 101,	4.9	3
17	Filtering, Sampling, and Reconstruction With Time-Varying Bandwidths. *IEEE Signal Processing Letters*, **2010**, 17, 241-244	3.2	3
16	Zeno friction and antifriction from quantum collision models. *Physical Review A*, **2019**, 100,	2.6	2
15	Probing geometric information using the Unruh effect in the vacuum. *Physical Review D*, **2019**, 100,	4.9	2
14	A convexity result in the spectral geometry of conformally equivalent metrics on surfaces. *International Journal of Geometric Methods in Modern Physics*, **2017**, 14, 1750157	1.5	2
13	Lorentzian spectral geometry with causal sets. *Classical and Quantum Gravity*, **2021**, 38, 015011	3.3	2
12	Replacing the Notion of Spacetime Distance by the Notion of Correlation. *Frontiers in Physics*, **2021**, 9,	3.9	2
11	Unruh effect of detectors with quantized center of mass. *Physical Review D*, **2021**, 103,	4.9	2
10	Entanglement harvesting with coherently delocalized matter. *Physical Review D*, **2021**, 103,	4.9	2
9	Superadditivity of channel capacity through quantum fields. *Physical Review D*, **2020**, 101,	4.9	1
8	Which part of the stress-energy tensor gravitates?. *Physical Review D*, **2020**, 101,	4.9	1
7	Efficient method to create superoscillations with generic target behavior. *Quantum Studies: Mathematics and Foundations*, **2020**, 7, 347-353	0.6	1
6	Acceleration-Induced Effects in Stimulated Light-Matter Interactions.. *Physical Review Letters*, **2022**, 128, 163603	7.4	1
5	The dynamics of entropies at the onset of interactions. *Journal of Physics A: Mathematical and Theoretical*, **2020**, 53, 425303	2	0
4	Towards a more algebraic footing for quantum field theory. *Journal of Physics A: Mathematical and Theoretical*, **2021**, 54, 285201	2	0

LIST OF PUBLICATIONS

3	Equivalence of Partition Functions Leads to Classification of Entropies and Means. *Entropy*, **2012**, 14, 1317-1342	2.8
2	Three short distance structures from quantum algebras. *European Physical Journal D*, **1997**, 47, 1191-1198	
1	Gravitational wave emission from the CMB and other thermal fields. *Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics*, **2021**, 816, 136208	4.2