

Achim Kempf

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

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	Acceleration-Induced Effects in Stimulated Light-Matter Interactions.. <i>Physical Review Letters</i> , 2022 , 128, 163603	7.4	1
91	Neural networks can learn to utilize correlated auxiliary noise. <i>Scientific Reports</i> , 2021 , 11, 21624	4.9	6
90	Lorentzian spectral geometry with causal sets. <i>Classical and Quantum Gravity</i> , 2021 , 38, 015011	3.3	2
89	Gravitational wave emission from the CMB and other thermal fields. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 2021 , 816, 136208	4.2	
88	Replacing the Notion of Spacetime Distance by the Notion of Correlation. <i>Frontiers in Physics</i> , 2021 , 9,	3.9	2
87	Unruh effect of detectors with quantized center of mass. <i>Physical Review D</i> , 2021 , 103,	4.9	2
86	Towards a more algebraic footing for quantum field theory. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2021 , 54, 285201	2	0
85	Entanglement harvesting with coherently delocalized matter. <i>Physical Review D</i> , 2021 , 103,	4.9	2
84	Superadditivity of channel capacity through quantum fields. <i>Physical Review D</i> , 2020 , 101,	4.9	1
83	Duality in the dynamics of Unruh-DeWitt detectors in conformally related spacetimes. <i>Physical Review D</i> , 2020 , 101,	4.9	3
82	Communication through quantum fields near a black hole. <i>Physical Review D</i> , 2020 , 101,	4.9	8
81	Transmission of quantum information through quantum fields. <i>Physical Review D</i> , 2020 , 101,	4.9	7
80	Coherent delocalization in the light-matter interaction. <i>Physical Review D</i> , 2020 , 101,	4.9	11
79	Which part of the stress-energy tensor gravitates?. <i>Physical Review D</i> , 2020 , 101,	4.9	1
78	The dynamics of entropies at the onset of interactions. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2020 , 53, 425303	2	0
77	Efficient method to create superoscillations with generic target behavior. <i>Quantum Studies: Mathematics and Foundations</i> , 2020 , 7, 347-353	0.6	1
76	Zeno friction and antifricition from quantum collision models. <i>Physical Review A</i> , 2019 , 100,	2.6	2

75	Probing geometric information using the Unruh effect in the vacuum. <i>Physical Review D</i> , 2019 , 100,	4.9	2
74	Roadmap on superoscillations. <i>Journal of Optics (United Kingdom)</i> , 2019 , 21, 053002	1.7	59
73	Four aspects of superoscillations. <i>Quantum Studies: Mathematics and Foundations</i> , 2018 , 5, 477-484	0.6	16
72	Quantum Gravity, Information Theory and the CMB. <i>Foundations of Physics</i> , 2018 , 48, 1191-1203	1.2	8
71	On the Unruh effect, trajectories and information. <i>Classical and Quantum Gravity</i> , 2018 , 35, 184002	3.3	4
70	Transmitting qubits through relativistic fields. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2018 , 51, 485301	2	9
69	A classification of open Gaussian dynamics. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2018 , 51, 245301	2	6
68	Gaussian ancillary bombardment. <i>Physical Review A</i> , 2018 , 97,	2.6	6
67	Integration by differentiation: new proofs, methods and examples. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2017 , 50, 235201	2	4
66	Towards spectral geometry for causal sets. <i>Classical and Quantum Gravity</i> , 2017 , 34, 094001	3.3	6
65	Natural Covariant Planck Scale Cutoffs and the Cosmic Microwave Background Spectrum. <i>Physical Review Letters</i> , 2017 , 119, 031301	7.4	9
64	Driving quantum systems with superoscillations. <i>Journal of Mathematical Physics</i> , 2017 , 58, 082101	1.2	8
63	Correlation-Enhanced Algorithmic Cooling. <i>Physical Review Letters</i> , 2017 , 119, 050502	7.4	12
62	A convexity result in the spectral geometry of conformally equivalent metrics on surfaces. <i>International Journal of Geometric Methods in Modern Physics</i> , 2017 , 14, 1750157	1.5	2
61	Asymptotically limitless quantum energy teleportation via qudit probes. <i>Physical Review A</i> , 2016 , 93,	2.6	10
60	Universal scheme for indirect quantum control. <i>Physical Review A</i> , 2016 , 93,	2.6	14
59	Towards spectral geometric methods for Euclidean quantum gravity. <i>Physical Review D</i> , 2016 , 93,	4.9	9
58	Scaling properties of superoscillations and the extension to periodic signals. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2016 , 49, 335202	2	6

57	Renormalized Unruh-DeWitt particle detector models for boson and fermion fields. <i>Physical Review D</i> , 2016 , 93,	4.9	24
56	Spacetime curvature in terms of scalar field propagators. <i>Physical Review D</i> , 2016 , 93,	4.9	8
55	New methods for creating superoscillations. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2016 , 49, 505203	2	12
54	How to (path-) integrate by differentiating. <i>Journal of Physics: Conference Series</i> , 2015 , 626, 012015	0.3	7
53	Perfect Zeno-like effect through imperfect measurements at a finite frequency. <i>Physical Review A</i> , 2015 , 91,	2.6	14
52	Information transmission without energy exchange. <i>Physical Review Letters</i> , 2015 , 114, 110505	7.4	41
51	Locality and entanglement in bandlimited quantum field theory. <i>Physical Review D</i> , 2015 , 92,	4.9	15
50	Quantum Gravity on a Quantum Computer?. <i>Foundations of Physics</i> , 2014 , 44, 472-482	1.2	7
49	New Dirac delta function based methods with applications to perturbative expansions in quantum field theory. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2014 , 47, 415204	2	10
48	Quantum seismology. <i>New Journal of Physics</i> , 2014 , 16, 105020	2.9	17
47	Casimir forces on atoms in optical cavities. <i>Physical Review A</i> , 2014 , 89,	2.6	64
46	Quantum signaling in cavity QED. <i>Physical Review A</i> , 2014 , 89,	2.6	31
45	Purified discord and multipartite entanglement. <i>Annals of Physics</i> , 2013 , 337, 153-162	2.5	4
44	Processing quantum information with relativistic motion of atoms. <i>Physical Review Letters</i> , 2013 , 110, 160501	7.4	39
43	Shape from sound: toward new tools for quantum gravity. <i>Physical Review Letters</i> , 2013 , 110, 121301	7.4	15
42	Sustainable entanglement production from a quantum field. <i>Physical Review A</i> , 2013 , 88,	2.6	55
41	Generalized uncertainty principles and localization of a particle in discrete space. <i>Physical Review D</i> , 2012 , 86,	4.9	50
40	Fundamental quantum optics experiments conceivable with satellites reaching relativistic distances and velocities. <i>Classical and Quantum Gravity</i> , 2012 , 29, 224011	3.3	90

39	Equivalence of Partition Functions Leads to Classification of Entropies and Means. <i>Entropy</i> , 2012 , 14, 1317-1342	2.8	
38	Spacetime could be simultaneously continuous and discrete, in the same way that information can be. <i>New Journal of Physics</i> , 2010 , 12, 115001	2.9	36
37	Filtering, Sampling, and Reconstruction With Time-Varying Bandwidths. <i>IEEE Signal Processing Letters</i> , 2010 , 17, 241-244	3.2	3
36	Quantum error correction on infinite-dimensional Hilbert spaces. <i>Journal of Mathematical Physics</i> , 2009 , 50, 062108	1.2	12
35	Information-theoretic natural ultraviolet cutoff for spacetime. <i>Physical Review Letters</i> , 2009 , 103, 231301	7.4	25
34	On the stability of a generalized Shannon sampling theorem 2008 ,		4
33	On the Casimir effect in the high-Tccuprates. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2008 , 41, 164038	2	6
32	Information theory, spectral geometry, and quantum gravity. <i>Physical Review Letters</i> , 2008 , 100, 021304	7.4	20
31	Approximation of Bandlimited Functions on a Non-Compact Manifold by Bandlimited Functions on Compact Submanifolds. <i>Sampling Theory in Signal and Information Processing</i> , 2008 , 7, 281-292	0.5	4
30	On a Non-Fourier Generalization of Shannon Sampling Theory 2007 ,		5
29	Generalization of quantum error correction via the Heisenberg picture. <i>Physical Review Letters</i> , 2007 , 98, 100502	7.4	46
28	Quantum error correction of observables. <i>Physical Review A</i> , 2007 , 76,	2.6	29
27	Exact solution of inflationary model with minimum length. <i>Physical Review D</i> , 2006 , 74,	4.9	22
26	Minimum length cutoff in inflation and uniqueness of the action. <i>Physical Review D</i> , 2005 , 71,	4.9	61
25	Analysis of superoscillatory wave functions. <i>Journal of Mathematical Physics</i> , 2005 , 46, 012101	1.2	22
24	Unusual properties of superoscillating particles. <i>Journal of Physics A</i> , 2004 , 37, 12067-12076		61
23	Covariant information-density cutoff in curved space-time. <i>Physical Review Letters</i> , 2004 , 92, 221301	7.4	35
22	Fields with finite information density. <i>Physical Review D</i> , 2004 , 69,	4.9	16

21	Perturbation spectrum in inflation with a cutoff. <i>Physical Review D</i> , 2001 , 64,	4.9	179
20	Mode generating mechanism in inflation with a cutoff. <i>Physical Review D</i> , 2001 , 63,	4.9	170
19	Fields over unsharp coordinates. <i>Physical Review Letters</i> , 2000 , 85, 2873-6	7.4	49
18	Unsharp degrees of freedom and the generating of symmetries. <i>Physical Review D</i> , 2000 , 63,	4.9	12
17	Black holes, bandwidths and Beethoven. <i>Journal of Mathematical Physics</i> , 2000 , 41, 2360-2374	1.2	64
16	On the three short-distance structures which can be described by linear operators. <i>Reports on Mathematical Physics</i> , 1999 , 43, 171-177	0.8	12
15	Corrections to the emergent canonical commutation relations arising in the statistical mechanics of matrix models. <i>Journal of Mathematical Physics</i> , 1998 , 39, 5083-5097	1.2	4
14	On quantum field theory with nonzero minimal uncertainties in positions and momenta. <i>Journal of Mathematical Physics</i> , 1997 , 38, 1347-1372	1.2	104
13	Non-pointlike particles in harmonic oscillators. <i>Journal of Physics A</i> , 1997 , 30, 2093-2101		344
12	Minimal length uncertainty relation and ultraviolet regularization. <i>Physical Review D</i> , 1997 , 55, 7909-7920.	4.9	283
11	Chain termination codons and polymerase-induced frameshift mutations. <i>FEBS Letters</i> , 1997 , 419, 153-63.	3.8	18
10	Three short distance structures from quantum algebras. <i>European Physical Journal D</i> , 1997 , 47, 1191-1198		
9	Noncommutative geometric regularization. <i>Physical Review D</i> , 1996 , 54, 5174-5178	4.9	35
8	Maximal localization in the presence of minimal uncertainties in positions and in momenta. <i>Journal of Mathematical Physics</i> , 1996 , 37, 2121-2137	1.2	174
7	Hilbert space representation of the minimal length uncertainty relation. <i>Physical Review D</i> , 1995 , 52, 1108-1118	4.9	1157
6	Algebraic q-integration and Fourier theory on quantum and braided spaces. <i>Journal of Mathematical Physics</i> , 1994 , 35, 6802-6837	1.2	52
5	Quantum groups and quantum field theory with nonzero minimal uncertainties in positions and momenta. <i>European Physical Journal D</i> , 1994 , 44, 1041-1048		13
4	Sub-Hopf-algebra-induced twists of quantum enveloping algebras. <i>Journal of Mathematical Physics</i> , 1994 , 35, 1931-1938	1.2	5

3	Uncertainty relation in quantum mechanics with quantum group symmetry. <i>Journal of Mathematical Physics</i> , 1994 , 35, 4483-4496	1.2	278
2	Quantum group symmetric BargmannFock space: Integral kernels, Green functions, driving forces. <i>Journal of Mathematical Physics</i> , 1993 , 34, 969-987	1.2	23
1	Quantum group-symmetric fock spaces with bargmann-fock representation. <i>Letters in Mathematical Physics</i> , 1992 , 26, 1-12	1.2	29