

Holger Gies

List of Publications by Year in descending order

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Version: 2024-02-01

129
papers

6,582
citations

50276

46
h-index

69250

77
g-index

130
all docs

130
docs citations

130
times ranked

1768
citing authors

#	ARTICLE	IF	CITATIONS
1	Dynamically Assisted Schwinger Mechanism. <i>Physical Review Letters</i> , 2008, 101, 130404.	7.8	279
2	Quark confinement from colour confinement. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 2010, 684, 262-267.	4.1	232
3	Introduction to the Functional RG and Applications to Gauge Theories. <i>Lecture Notes in Physics</i> , 2012, , 287-348.	0.7	195
4	Worldline instantons and the fluctuation prefactor. <i>Physical Review D</i> , 2006, 73, .	4.7	173
5	Casimir Effect for Curved Geometries: Proximity-Force-Approximation Validity Limits. <i>Physical Review Letters</i> , 2006, 96, 220401.	7.8	169
6	Casimir effect on the worldline. <i>Journal of High Energy Physics</i> , 2003, 2003, 018-018.	4.7	166
7	Catalysis of Schwinger vacuum pair production. <i>Physical Review D</i> , 2009, 80, .	4.7	164
8	Momentum Signatures for Schwinger Pair Production in Short Laser Pulses with a Subcycle Structure. <i>Physical Review Letters</i> , 2009, 102, 150404.	7.8	162
9	Renormalization flow of bound states. <i>Physical Review D</i> , 2002, 65, .	4.7	156
10	Worldline algorithms for Casimir configurations. <i>Physical Review D</i> , 2006, 74, .	4.7	136
11	Polarized Light Propagating in a Magnetic Field as a Probe for Millicharged Fermions. <i>Physical Review Letters</i> , 2006, 97, 140402.	7.8	125
12	Critical Reflections on Asymptotically Safe Gravity. <i>Frontiers in Physics</i> , 2020, 8, .	2.1	124
13	Pair production in inhomogeneous fields. <i>Physical Review D</i> , 2005, 72, .	4.7	120
14	Casimir Edge Effects. <i>Physical Review Letters</i> , 2006, 97, 220405.	7.8	115
15	Chiral phase boundary of QCD at finite temperature. <i>Journal of High Energy Physics</i> , 2006, 2006, 024-024.	4.7	114
16	Light fermions in quantum gravity. <i>New Journal of Physics</i> , 2011, 13, 125012.	2.9	112
17	Gravitational Two-Loop Counterterm Is Asymptotically Safe. <i>Physical Review Letters</i> , 2016, 116, 211302.	7.8	111
18	Running coupling in Yang-Mills theory: A flow equation study. <i>Physical Review D</i> , 2002, 66, .	4.7	106

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19	Light propagation in nontrivial QED vacua. Physical Review D, 1998, 58, .	4.7	102
20	Particle Self-Bunching in the Schwinger Effect in Spacetime-Dependent Electric Fields. Physical Review Letters, 2011, 107, 180403.	7.8	101
21	Renormalization flow of Yang-Mills propagators. Journal of High Energy Physics, 2004, 2004, 048-048.	4.7	92
22	Ghost anomalous dimension in asymptotically safe quantum gravity. Physical Review D, 2010, 81, .	4.7	87
23	Asymptotic safety: A simple example. Physical Review D, 2011, 83, .	4.7	86
24	Generalized parametrization dependence in quantum gravity. Physical Review D, 2015, 92, .	4.7	86
25	Universality of spontaneous chiral symmetry breaking in gauge theories. Physical Review D, 2004, 69, .	4.7	83
26	Particle interpretation of the PVLAS data: Neutral versus charged particles. Physical Review D, 2007, 75, .	4.7	82
27	On the nature of the phase transition in $SU(N)$, $Sp(2)$ and $E(7)$ Yang-Mills theory. European Physical Journal C, 2010, 70, 689-702.	3.9	80
28	Running coupling at finite temperature and chiral symmetry restoration in QCD. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2007, 645, 53-58.	4.1	76
29	Vacuum birefringence in strong inhomogeneous electromagnetic fields. Physical Review D, 2015, 92, .	4.7	72
30	Renormalizability of gauge theories in extra dimensions. Physical Review D, 2003, 68, .	4.7	71
31	Effective Mass Signatures in Multiphoton Pair Production. Physical Review Letters, 2014, 112, 050402.	7.8	71
32	Towards a renormalizable standard model without a fundamental Higgs scalar. Physical Review D, 2004, 69, .	4.7	70
33	Phase structure of many-flavor QED^{3+1} . Physical Review D, 2014, 90, .	4.7	69
34	Wilsonian effective action for $SU(2)$ Yang-Mills theory with the Cho-Faddeev-Niemi-Shabanov decomposition. Physical Review D, 2001, 63, .	4.7	68
35	Quantum diffusion of magnetic fields in a numerical worldline approach. Nuclear Physics B, 2001, 613, 353-365.	2.5	67
36	Asymptotically free scalar curvature-ghost coupling in quantum Einstein gravity. Physical Review D, 2009, 80, .	4.7	65

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37	Strong laser fields as a probe for fundamental physics. European Physical Journal D, 2009, 55, 311-317.	1.3	64
38	LOOPS AND LOOP CLOUDS – A NUMERICAL APPROACH TO THE WORLDLINE FORMALISM IN QED. International Journal of Modern Physics A, 2002, 17, 966-976.	1.5	63
39	UV fixed-point structure of the three-dimensional Thirring model. Physical Review D, 2010, 82, .	4.7	62
40	QED effective action at finite temperature: Two-loop dominance. Physical Review D, 2000, 61, .	4.7	59
41	Renormalization Flow of QED. Physical Review Letters, 2004, 93, 110405.	7.8	58
42	Critical behavior of the Thirring model. Physical Review D, 2012, 86, .	4.7	57
43	An addendum to the Heisenberg-Euler effective action beyond one loop. Journal of High Energy Physics, 2017, 2017, 1.	4.7	53
44	The Higgs mass and the scale of new physics. Journal of High Energy Physics, 2015, 2015, 1.	4.7	51
45	Asymptotic safety of simple Yukawa systems. European Physical Journal C, 2010, 66, 387-402.	3.9	48
46	Towards an asymptotic-safety scenario for chiral Yukawa systems. European Physical Journal C, 2010, 66, 403-418.	3.9	46
47	Determination of high-purity polarization state of X-rays. Optics Communications, 2011, 284, 915-918.	2.1	46
48	Pair production in rotating electric fields. Physical Review D, 2014, 89, .	4.7	46
49	QED effective action at finite temperature. Physical Review D, 1999, 60, .	4.7	44
50	Higgs mass bounds from renormalization flow for a Higgs-top-bottom model. European Physical Journal C, 2015, 75, 1.	3.9	44
51	Accelerator cavities as a probe of millicharged particles. Europhysics Letters, 2006, 76, 794-800.	2.0	42
52	Hidden in the light: Magnetically induced afterglow from trapped chameleon fields. Physical Review D, 2008, 77, .	4.7	42
53	Beyond Miransky scaling. Physical Review D, 2011, 84, .	4.7	42
54	The quest for axions and other new light particles. Annalen Der Physik, 2013, 525, A93.	2.4	42

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55	Quantum reflection as a new signature of quantum vacuum nonlinearity. <i>New Journal of Physics</i> , 2013, 15, 083002.	2.9	42
56	An asymptotic safety scenario for gauged chiral Higgs-Yukawa models. <i>European Physical Journal C</i> , 2013, 73, 1.	3.9	41
57	Higgs mass bounds from renormalization flow for a simple Yukawa model. <i>Physical Review D</i> , 2014, 89, .	4.7	40
58	All-optical signatures of strong-field QED in the vacuum emission picture. <i>Physical Review D</i> , 2018, 97, .	4.7	39
59	Scaling laws near the conformal window of many-flavor QCD. <i>Journal of High Energy Physics</i> , 2010, 2010, 1.	4.7	37
60	Fixed-point structure of low-dimensional relativistic fermion field theories: Universality classes and emergent symmetry. <i>Physical Review D</i> , 2015, 92, .	4.7	37
61	Fermions in gravity with local spin-base invariance. <i>Physical Review D</i> , 2014, 89, .	4.7	36
62	Photon-photon scattering at the high-intensity frontier. <i>Physical Review D</i> , 2018, 97, .	4.7	36
63	Fermion-induced quantum action of vortex systems. <i>Nuclear Physics B</i> , 2002, 646, 158-180.	2.5	35
64	Renormalization group study of magnetic catalysis in the Gross-Neveu^{3-2} model. <i>Physical Review B</i> , 2012, 85, .		35
65	Global flow of the Higgs potential in a Yukawa model. <i>European Physical Journal C</i> , 2016, 76, 1.	3.9	34
66	Axion-like-particle search with high-intensity lasers. <i>Journal of High Energy Physics</i> , 2010, 2010, 1.	4.7	33
67	Critical Schwinger Pair Production. <i>Physical Review Letters</i> , 2016, 116, 090406.	7.8	32
68	Flow equation for supersymmetric quantum mechanics. <i>Journal of High Energy Physics</i> , 2009, 2009, 028-028.	4.7	31
69	Laser photon merging in an electromagnetic field inhomogeneity. <i>Physical Review D</i> , 2014, 90, .	4.7	30
70	All-optical signatures of quantum vacuum nonlinearities in generic laser fields. <i>Physical Review D</i> , 2019, 99, .	4.7	30
71	Light propagation in non-trivial QED vacua. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 1998, 431, 420-429.	4.1	29
72	Interplay between geometry and temperature for inclined Casimir plates. <i>Physical Review D</i> , 2009, 80, .	4.7	28

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73	Nonmonotonic Thermal Casimir Force from Geometry-Temperature Interplay. <i>Physical Review Letters</i> , 2010, 105, 040403.	7.8	27
74	Quantum effective actions from nonperturbative worldline dynamics. <i>Journal of High Energy Physics</i> , 2005, 2005, 067-067.	4.7	26
75	Vacuum polarization tensor in inhomogeneous magnetic fields. <i>Physical Review D</i> , 2011, 84, .	4.7	26
76	Quantum reflection of photons off spatio-temporal electromagnetic field inhomogeneities. <i>New Journal of Physics</i> , 2015, 17, 043060.	2.9	26
77	QED effective action revisited. <i>Canadian Journal of Physics</i> , 2002, 80, 267-284.	1.1	25
78	Interferometry of light propagation in pulsed fields. <i>Europhysics Letters</i> , 2009, 87, 21002.	2.0	25
79	A functional perspective on emergent supersymmetry. <i>Journal of High Energy Physics</i> , 2017, 2017, 1.	4.7	25
80	Photon merging and splitting in electromagnetic field inhomogeneities. <i>Physical Review D</i> , 2016, 93, .	4.7	24
81	Impact of generalized Yukawa interactions on the lower Higgs-mass bound. <i>European Physical Journal C</i> , 2017, 77, 1.	3.9	24
82	Phase diagram and fixed-point structure of two-dimensional $N=1$ Wess-Zumino models. <i>Physical Review D</i> , 2009, 80, .	4.7	23
83	Phase transition and critical behavior of $\langle \text{mml:math display="inline"} \langle \text{mml:mi} \rangle \text{d} \langle \text{mml:mi} \rangle \langle \text{mml:mo} \rangle = \langle \text{mml:mo} \rangle \langle \text{mml:mn} \rangle^3 \langle \text{mml:mn} \rangle \langle \text{mml:math} \rangle$ chiral fermion models with left-right asymmetry. <i>Physical Review D</i> , 2010, 81, .	4.7	23
84	Global surpluses of spin-base invariant fermions. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 2015, 743, 415-419.	4.1	23
85	Boosting Quantum Vacuum Signatures by Coherent Harmonic Focusing. <i>Physical Review Letters</i> , 2019, 123, 091802.	7.8	23
86	Zero modes, beta functions and IR/LUV interplay in higher-loop QED. <i>Journal of High Energy Physics</i> , 2002, 2002, 032-032.	4.7	22
87	Gluon condensation and scaling exponents for the propagators in Yang-Mills theory. <i>Physical Review D</i> , 2011, 83, .	4.7	22
88	Functional renormalization for the Bardeenâ€“Cooperâ€“Schrieffer to Boseâ€“Einstein condensation crossover. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2011, 369, 2779-2799.	3.4	21
89	Magnetically Amplified Tunneling of the Third Kind as a Probe of Minicharged Particles. <i>Physical Review Letters</i> , 2012, 109, 131802.	7.8	21
90	Supersymmetry breaking as a quantum phase transition. <i>Physical Review D</i> , 2009, 80, .	4.7	20

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91	Geothermal Casimir phenomena for the sphere-plate and cylinder-plate configurations. Physical Review D, 2010, 82, .	4.7	20
92	Scalar Casimir-Polder forces for uniaxial corrugations. Physical Review D, 2008, 78, .	4.7	18
93	Critical Schwinger pair production. II. Universality in the deeply critical regime. Physical Review D, 2017, 95, .	4.7	18
94	Non-Abelian Higgs models: Paving the way for asymptotic freedom. Physical Review D, 2017, 96, .	4.7	18
95	External fields as a probe for fundamental physics. Journal of Physics A: Mathematical and Theoretical, 2008, 41, 164039.	2.1	17
96	Asymptotically free scaling solutions in non-Abelian Higgs models. Physical Review D, 2015, 92, .	4.7	17
97	Curvature bound from gravitational catalysis. Physical Review D, 2018, 97, .	4.7	17
98	Light cone condition for a thermalized QED vacuum. Physical Review D, 1999, 60, .	4.7	16
99	Geothermal Casimir phenomena. Journal of Physics A: Mathematical and Theoretical, 2008, 41, 164042.	2.1	16
100	OPTICAL PROBES OF THE QUANTUM VACUUM: THE PHOTON POLARIZATION TENSOR IN EXTERNAL FIELDS. International Journal of Modern Physics Conference Series, 2012, 14, 403-415.	0.7	16
101	Many-flavor phase diagram of the $(2 + 1)d$ Gross-Neveu model at finite temperature. Journal of Physics A: Mathematical and Theoretical, 2013, 46, 285002.	2.1	15
102	Neutrino interactions with a weak slowly varying electromagnetic field. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2000, 480, 129-134.	4.1	14
103	Momentum dependence of quantum critical Dirac systems. Physical Review D, 2019, 99, .	4.7	14
104	Vacuum birefringence at x-ray free-electron lasers. New Journal of Physics, 2021, 23, 095001.	2.9	14
105	Asymptotically safe QED. European Physical Journal C, 2020, 80, 1.	3.9	14
106	Magnetically amplified light-shining-through-walls via virtual minicharged particles. Physical Review D, 2013, 87, .	4.7	13
107	Worldline Monte Carlo for fermion models at large N_f . Journal of High Energy Physics, 2009, 2009, 010-010.	4.7	12
108	Renormalization flow towards gravitational catalysis in the $3d$ Gross-Neveu model. Physical Review D, 2013, 87, .	4.7	12

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109	Flow equation for Halpern-Huang directions of scalar $O(N)$ models. <i>Physical Review D</i> , 2001, 63, .	4.7	11
110	Tunneling of the 3rd kind. <i>Journal of High Energy Physics</i> , 2009, 2009, 063-063.	4.7	10
111	Flavor condensate and vacuum (in-)stability in QED ₂₊₁ . <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 1997, 392, 182-188.	4.1	9
112	Effective action for the order parameter of the deconfinement transition of Yang-Mills theories. <i>Physical Review D</i> , 2000, 63, .	4.7	9
113	BRST-invariant RG flows. <i>Physical Review D</i> , 2019, 99, .	4.7	9
114	Quantum vacuum signatures in multicolor laser pulse collisions. <i>Physical Review D</i> , 2021, 103, .	4.7	9
115	Renormalization flow of axion electrodynamics. <i>Physical Review D</i> , 2012, 86, .	4.7	8
116	Renormalization group flow of the Higgs potential. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2018, 376, 20170120.	3.4	8
117	Asymptotic freedom in \mathbb{Z}_2 -Yukawa-QCD models. <i>European Physical Journal C</i> , 2019, 79, 1.	3.9	8
118	Scheme dependence of asymptotically free solutions. <i>European Physical Journal C</i> , 2019, 79, 1.	3.9	8
119	Propagator from nonperturbative worldline dynamics. <i>Physical Review D</i> , 2019, 100, .	4.7	8
120	Vacuum polarisation tensors in constant electromagnetic fields: Part III. <i>Nuclear Physics B</i> , 2001, 609, 313-324.	2.5	6
121	ENERGY-MOMENTUM TENSORS WITH WORLDLINE NUMERICS. <i>International Journal of Modern Physics Conference Series</i> , 2012, 14, 511-520.	0.7	6
122	Worldline numerics for energy-momentum tensors in Casimir geometries. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2016, 49, 135402.	2.1	6
123	Geometry of spin-field coupling on the worldline. <i>Physical Review D</i> , 2005, 72, .	4.7	5
124	Characterization of two ultrashort laser pulses using interferometric imaging of self-diffraction. <i>Optics Letters</i> , 2017, 42, 5246.	3.3	5
125	Curvature bound from gravitational catalysis in thermal backgrounds. <i>Physical Review D</i> , 2021, 103, .	4.7	5
126	Analytical results for the confinement mechanism in three-dimensional QCD. <i>Physical Review D</i> , 1996, 54, 7619-7627.	4.7	4

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127	The Phase Diagram for Wess-Zumino Models. , 2010, , .		4
128	Short distance behavior of (2+1)-dimensional QCD. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1996, 382, 257-261.	4.1	3
129	Tunnelling of the 3rd kind: A test of the effective non-locality of quantum field theory. Europhysics Letters, 2013, 101, 61001.	2.0	1