

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	Quantum vacuum signatures in multicolor laser pulse collisions. <i>Physical Review D</i> , 2021, 103, .	4.7	9
2	Curvature bound from gravitational catalysis in thermal backgrounds. <i>Physical Review D</i> , 2021, 103, .	4.7	5
3	Vacuum birefringence at x-ray free-electron lasers. <i>New Journal of Physics</i> , 2021, 23, 095001.	2.9	14
4	Critical Reflections on Asymptotically Safe Gravity. <i>Frontiers in Physics</i> , 2020, 8, .	2.1	124
5	Asymptotically safe QED. <i>European Physical Journal C</i> , 2020, 80, 1.	3.9	14
6	Momentum dependence of quantum critical Dirac systems. <i>Physical Review D</i> , 2019, 99, .	4.7	14
7	Asymptotic freedom in \mathbb{Z}_2 -Yukawa-QCD models. <i>European Physical Journal C</i> , 2019, 79, 1.	3.9	8
8	Boosting Quantum Vacuum Signatures by Coherent Harmonic Focusing. <i>Physical Review Letters</i> , 2019, 123, 091802.	7.8	23
9	All-optical signatures of quantum vacuum nonlinearities in generic laser fields. <i>Physical Review D</i> , 2019, 99, .	4.7	30
10	Scheme dependence of asymptotically free solutions. <i>European Physical Journal C</i> , 2019, 79, 1.	3.9	8
11	BRST-invariant RG flows. <i>Physical Review D</i> , 2019, 99, .	4.7	9
12	Propagator from nonperturbative worldline dynamics. <i>Physical Review D</i> , 2019, 100, .	4.7	8
13	Photon-photon scattering at the high-intensity frontier. <i>Physical Review D</i> , 2018, 97, .	4.7	36
14	Renormalization group flow of the Higgs potential. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2018, 376, 20170120.	3.4	8
15	Curvature bound from gravitational catalysis. <i>Physical Review D</i> , 2018, 97, .	4.7	17
16	All-optical signatures of strong-field QED in the vacuum emission picture. <i>Physical Review D</i> , 2018, 97, .	4.7	39
17	Critical Schwinger pair production. II. Universality in the deeply critical regime. <i>Physical Review D</i> , 2017, 95, .	4.7	18
18	Non-Abelian Higgs models: Paving the way for asymptotic freedom. <i>Physical Review D</i> , 2017, 96, .	4.7	18

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19	A functional perspective on emergent supersymmetry. Journal of High Energy Physics, 2017, 2017, 1.	4.7	25
20	Characterization of two ultrashort laser pulses using interferometric imaging of self-diffraction. Optics Letters, 2017, 42, 5246.	3.3	5
21	Impact of generalized Yukawa interactions on the lower Higgs-mass bound. European Physical Journal C, 2017, 77, 1.	3.9	24
22	An addendum to the Heisenberg-Euler effective action beyond one loop. Journal of High Energy Physics, 2017, 2017, 1.	4.7	53
23	Worldline numerics for energy-momentum tensors in Casimir geometries. Journal of Physics A: Mathematical and Theoretical, 2016, 49, 135402.	2.1	6
24	Photon merging and splitting in electromagnetic field inhomogeneities. Physical Review D, 2016, 93, .	4.7	24
25	Critical Schwinger Pair Production. Physical Review Letters, 2016, 116, 090406.	7.8	32
26	Gravitational Two-Loop Counterterm Is Asymptotically Safe. Physical Review Letters, 2016, 116, 211302.	7.8	111
27	Global flow of the Higgs potential in a Yukawa model. European Physical Journal C, 2016, 76, 1.	3.9	34
28	Asymptotically free scaling solutions in non-Abelian Higgs models. Physical Review D, 2015, 92, .	4.7	17
29	Vacuum birefringence in strong inhomogeneous electromagnetic fields. Physical Review D, 2015, 92, .	4.7	72
30	Generalized parametrization dependence in quantum gravity. Physical Review D, 2015, 92, .	4.7	86
31	Fixed-point structure of low-dimensional relativistic fermion field theories: Universality classes and emergent symmetry. Physical Review D, 2015, 92, .	4.7	37
32	Global surpluses of spin-base invariant fermions. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2015, 743, 415-419.	4.1	23
33	Quantum reflection of photons off spatio-temporal electromagnetic field inhomogeneities. New Journal of Physics, 2015, 17, 043060.	2.9	26
34	Higgs mass bounds from renormalization flow for a Higgs-“top”-bottom model. European Physical Journal C, 2015, 75, 1.	3.9	44
35	The Higgs mass and the scale of new physics. Journal of High Energy Physics, 2015, 2015, 1.	4.7	51
36	Effective Mass Signatures in Multiphoton Pair Production. Physical Review Letters, 2014, 112, 050402.	7.8	71

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37	Higgs mass bounds from renormalization flow for a simple Yukawa model. Physical Review D, 2014, 89, .	4.7	40
38	Fermions in gravity with local spin-base invariance. Physical Review D, 2014, 89, .	4.7	36
39	Pair production in rotating electric fields. Physical Review D, 2014, 89, .	4.7	46
40	Laser photon merging in an electromagnetic field inhomogeneity. Physical Review D, 2014, 90, .	4.7	30
41	Phase structure of many-flavor 3^2 QED. Physical Review D, 2014, 90, .	4.7	17
42	Renormalization flow towards gravitational catalysis in the 3^2 Gross-Neveu model. Physical Review D, 2013, 87, .	4.7	12
43	The quest for axions and other new light particles. Annalen Der Physik, 2013, 525, A93.	2.4	42
44	An asymptotic safety scenario for gauged chiral Higgs-Yukawa models. European Physical Journal C, 2013, 73, 1.	3.9	41
45	Many-flavor phase diagram of the $(2 + 1)$ Gross-Neveu model at finite temperature. Journal of Physics A: Mathematical and Theoretical, 2013, 46, 285002.	2.1	15
46	Quantum reflection as a new signature of quantum vacuum nonlinearity. New Journal of Physics, 2013, 15, 083002.	2.9	42
47	Tunnelling of the 3rd kind: A test of the effective non-locality of quantum field theory. Europhysics Letters, 2013, 101, 61001.	2.0	1
48	Magnetically amplified light-shining-through-walls via virtual minicharged particles. Physical Review D, 2013, 87, .	4.7	13
49	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
50	Renormalization flow of axion electrodynamics. Physical Review D, 2012, 86, .	4.7	8
51	Renormalization group study of magnetic catalysis in the 3^2 Gross-Neveu model. Physical Review B, 2012, 85, .	3.2	35
52	Magnetically Amplified Tunneling of the Third Kind as a Probe of Minicharged Particles. Physical Review Letters, 2012, 109, 131802.	7.8	21
53	ENERGY-MOMENTUM TENSORS WITH WORLDLINE NUMERICS. International Journal of Modern Physics Conference Series, 2012, 14, 511-520.	0.7	6
54	Introduction to the Functional RG and Applications to Gauge Theories. Lecture Notes in Physics, 2012, , 287-348.	0.7	195

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55	Critical behavior of the $(\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" \rangle Tj ETQq1 1 0.784314 rgBT /Overlock 10 T 5$) Thirring model. Physical Review D, 2012, 86, .	4.7	57
56	Gluon condensation and scaling exponents for the propagators in Yang-Mills theory. Physical Review D, 2011, 83, .	4.7	22
57	Vacuum polarization tensor in inhomogeneous magnetic fields. Physical Review D, 2011, 84, .	4.7	26
58	Determination of high-purity polarization state of X-rays. Optics Communications, 2011, 284, 915-918.	2.1	46
59	Functional renormalization for the Bardeen-Cooper-Schrieffer to Bose-Einstein condensation crossover. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2011, 369, 2779-2799.	3.4	21
60	Beyond Miransky scaling. Physical Review D, 2011, 84, .	4.7	42
61	Asymptotic safety: A simple example. Physical Review D, 2011, 83, .	4.7	86
62	Particle Self-Bunching in the Schwinger Effect in Spacetime-Dependent Electric Fields. Physical Review Letters, 2011, 107, 180403.	7.8	101
63	Light fermions in quantum gravity. New Journal of Physics, 2011, 13, 125012.	2.9	112
64	Asymptotic safety of simple Yukawa systems. European Physical Journal C, 2010, 66, 387-402.	3.9	48
65	Towards an asymptotic-safety scenario for chiral Yukawa systems. European Physical Journal C, 2010, 66, 403-418.	3.9	46
66	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
67	Scaling laws near the conformal window of many-flavor QCD. Journal of High Energy Physics, 2010, 2010, 1.	4.7	37
68	Axion-like-particle search with high-intensity lasers. Journal of High Energy Physics, 2010, 2010, 1.	4.7	33
69	Quark confinement from colour confinement. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2010, 684, 262-267.	4.1	232
70	Nonmonotonic Thermal Casimir Force from Geometry-Temperature Interplay. Physical Review Letters, 2010, 105, 040403.	7.8	27
71	Geothermal Casimir phenomena for the sphere-plate and cylinder-plate configurations. Physical Review D, 2010, 82, .	4.7	20
72	The Phase Diagram for Wess-Zumino Models. , 2010, , .		4

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73	Phase transition and critical behavior of $d < 3$ chiral fermion models with left-right asymmetry. Physical Review D, 2010, 81, .	4.7	23
74	Ghost anomalous dimension in asymptotically safe quantum gravity. Physical Review D, 2010, 81, .	4.7	87
75	UV fixed-point structure of the three-dimensional Thirring model. Physical Review D, 2010, 82, .	4.7	62
76	Interplay between geometry and temperature for inclined Casimir plates. Physical Review D, 2009, 80, .	4.7	28
77	Flow equation for supersymmetric quantum mechanics. Journal of High Energy Physics, 2009, 2009, 028-028.	4.7	31
78	Tunneling of the 3rd kind. Journal of High Energy Physics, 2009, 2009, 063-063.	4.7	10
79	Worldline Monte Carlo for fermion models at large N_f . Journal of High Energy Physics, 2009, 2009, 010-010.	4.7	12
80	Strong laser fields as a probe for fundamental physics. European Physical Journal D, 2009, 55, 311-317.	1.3	64
81	Supersymmetry breaking as a quantum phase transition. Physical Review D, 2009, 80, .	4.7	20
82	Asymptotically free scalar curvature-ghost coupling in quantum Einstein gravity. Physical Review D, 2009, 80, .	4.7	65
83	Catalysis of Schwinger vacuum pair production. Physical Review D, 2009, 80, .	4.7	164
84	Momentum Signatures for Schwinger Pair Production in Short Laser Pulses with a Subcycle Structure. Physical Review Letters, 2009, 102, 150404.	7.8	162
85	Phase diagram and fixed-point structure of two-dimensional $N=1$ Wess-Zumino models. Physical Review D, 2009, 80, .	4.7	23
86	Interferometry of light propagation in pulsed fields. Europhysics Letters, 2009, 87, 21002.	2.0	25
87	Dynamically Assisted Schwinger Mechanism. Physical Review Letters, 2008, 101, 130404.	7.8	279
88	Geothermal Casimir phenomena. Journal of Physics A: Mathematical and Theoretical, 2008, 41, 164042.	2.1	16
89	Hidden in the light: Magnetically induced afterglow from trapped chameleon fields. Physical Review D, 2008, 77, .	4.7	42
90	External fields as a probe for fundamental physics. Journal of Physics A: Mathematical and Theoretical, 2008, 41, 164039.	2.1	17

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91	Scalar Casimir-Polder forces for uniaxial corrugations. Physical Review D, 2008, 78, .	4.7	18
92	Particle interpretation of the PVLAS data: Neutral versus charged particles. Physical Review D, 2007, 75, .	4.7	82
93	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
94	Polarized Light Propagating in a Magnetic Field as a Probe for Millicharged Fermions. Physical Review Letters, 2006, 97, 140402.	7.8	125
95	Worldline instantons and the fluctuation prefactor. Physical Review D, 2006, 73, .	4.7	173
96	Accelerator cavities as a probe of millicharged particles. Europhysics Letters, 2006, 76, 794-800.	2.0	42
97	Chiral phase boundary of QCD at finite temperature. Journal of High Energy Physics, 2006, 2006, 024-024.	4.7	114
98	Worldline algorithms for Casimir configurations. Physical Review D, 2006, 74, .	4.7	136
99	Casimir Edge Effects. Physical Review Letters, 2006, 97, 220405.	7.8	115
100	Casimir Effect for Curved Geometries: Proximity-Force-Approximation Validity Limits. Physical Review Letters, 2006, 96, 220401.	7.8	169
101	Quantum effective actions from nonperturbative worldline dynamics. Journal of High Energy Physics, 2005, 2005, 067-067.	4.7	26
102	Pair production in inhomogeneous fields. Physical Review D, 2005, 72, .	4.7	120
103	Geometry of spin-field coupling on the worldline. Physical Review D, 2005, 72, .	4.7	5
104	Towards a renormalizable standard model without a fundamental Higgs scalar. Physical Review D, 2004, 69, .	4.7	70
105	Renormalization Flow of QED. Physical Review Letters, 2004, 93, 110405.	7.8	58
106	Universality of spontaneous chiral symmetry breaking in gauge theories. Physical Review D, 2004, 69, .	4.7	83
107	Renormalization flow of Yang-Mills propagators. Journal of High Energy Physics, 2004, 2004, 048-048.	4.7	92
108	Casimir effect on the worldline. Journal of High Energy Physics, 2003, 2003, 018-018.	4.7	166

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109	Renormalizability of gauge theories in extra dimensions. <i>Physical Review D</i> , 2003, 68, .	4.7	71
110	Renormalization flow of bound states. <i>Physical Review D</i> , 2002, 65, .	4.7	156
111	Running coupling in Yang-Mills theory: A flow equation study. <i>Physical Review D</i> , 2002, 66, .	4.7	106
112	Zero modes, beta functions and IR/UV interplay in higher-loop QED. <i>Journal of High Energy Physics</i> , 2002, 2002, 032-032.	4.7	22
113	LOOPS AND LOOP CLOUDS – A NUMERICAL APPROACH TO THE WORLDLINE FORMALISM IN QED. <i>International Journal of Modern Physics A</i> , 2002, 17, 966-976.	1.5	63
114	QED effective action revisited. <i>Canadian Journal of Physics</i> , 2002, 80, 267-284.	1.1	25
115	Fermion-induced quantum action of vortex systems. <i>Nuclear Physics B</i> , 2002, 646, 158-180.	2.5	35
116	Wilsonian effective action for SU(2) Yang-Mills theory with the Cho-Faddeev-Niemi-Shabanov decomposition. <i>Physical Review D</i> , 2001, 63, .	4.7	68
117	Vacuum polarisation tensors in constant electromagnetic fields: Part III. <i>Nuclear Physics B</i> , 2001, 609, 313-324.	2.5	6
118	Quantum diffusion of magnetic fields in a numerical worldline approach. <i>Nuclear Physics B</i> , 2001, 613, 353-365.	2.5	67
119	Flow equation for Halpern-Huang directions of scalar O(N) models. <i>Physical Review D</i> , 2001, 63, .	4.7	11
120	Neutrino interactions with a weak slowly varying electromagnetic field. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 2000, 480, 129-134.	4.1	14
121	Effective action for the order parameter of the deconfinement transition of Yang-Mills theories. <i>Physical Review D</i> , 2000, 63, .	4.7	9
122	QED effective action at finite temperature: Two-loop dominance. <i>Physical Review D</i> , 2000, 61, .	4.7	59
123	QED effective action at finite temperature. <i>Physical Review D</i> , 1999, 60, .	4.7	44
124	Light cone condition for a thermalized QED vacuum. <i>Physical Review D</i> , 1999, 60, .	4.7	16
125	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
126	Light propagation in nontrivial QED vacua. <i>Physical Review D</i> , 1998, 58, .	4.7	102

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127	Flavor condensate and vacuum (in-)stability in QED ₂₊₁ . Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1997, 392, 182-188.	4.1	9
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	Analytical results for the confinement mechanism in three-dimensional QCD. Physical Review D, 1996, 54, 7619-7627.	4.7	4