Igor A Shovkovy

List of Publications by Year
in descending order

140	6,866	57758 44	62596 80
papers	citations	h-index	g-index

145	145	145	2117
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Quantum field theory in a magnetic field: From quantum chromodynamics to graphene and Dirac semimetals. Physics Reports, 2015, 576, 1-209.	25.6	489
2	Catalysis of Dynamical Flavor Symmetry Breaking by a Magnetic Field in 2 + 1 Dimensions. Physical Review Letters, 1994, 73, 3499-3502.	7.8	483
3	Magnetic field driven metal-insulator phase transition in planar systems. Physical Review B, 2002, 66, .	3.2	403
4	Dimensional reduction and dynamical chiral symmetry breaking by a magnetic field in 3 + 1 dimensions. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1995, 349, 477-483.	4.1	269
5	Gapless two-flavor color superconductor. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2003, 564, 205-211.	4.1	215
6	Dynamical flavor symmetry breaking by a magnetic field in 2+1 dimensions. Physical Review D, 1995, 52, 4718-4735.	4.7	206
7	Phase diagram of neutral quark matter: Self-consistent treatment of quark masses. Physical Review D, 2005, 72, .	4.7	198
8	Magnetic catalysis and anisotropic confinement in QCD. Physical Review D, 2002, 66, .	4.7	178
9	Excitonic gap, phase transition, and quantum Hall effect in graphene. Physical Review B, 2006, 74, .	3.2	163
10	Two Lectures on Color Superconductivity*. Foundations of Physics, 2005, 35, 1309-1358.	1.3	153
11	Schwinger-Dyson approach to color superconductivity in dense QCD. Physical Review D, 2000, 61, .	4.7	141
12	Chromomagnetic instability in dense quark matter. Physical Review D, 2004, 70, .	4.7	136
13	Dynamical chiral symmetry breaking by a magnetic field in QED. Physical Review D, 1995, 52, 4747-4751.	4.7	135
14	Gapless color superconductivity at zero and at finite temperature. Nuclear Physics A, 2003, 729, 835-863.	1.5	133
15	Color-flavor locked superconductor in a magnetic field. Physical Review D, 2007, 76, .	4.7	131
16	Chiral anomaly, dimensional reduction, and magnetoresistivity of Weyl and Dirac semimetals. Physical Review B, 2014, 89, .	3.2	117
17	On gap equations and color-flavor locking in cold dense QCD with three massless flavors. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1999, 470, 189-199.	4.1	100
18	Magnetic Catalysis: A Review. Lecture Notes in Physics, 2013, , 13-49.	0.7	98

#	Article	IF	Citations
19	Spontaneous Symmetry Breaking with Abnormal Number of Nambu-Goldstone Bosons and Kaon Condensate. Physical Review Letters, 2002, 88, 111601.	7.8	96
20	Screening masses in a neutral two-flavor color superconductor. Physical Review D, 2004, 70, .	4.7	96
21	Catalysis of Dynamical Flavor Symmetry Breaking by a Magnetic Field in 2 + 1 Dimensions. Physical Review Letters, 1996, 76, 1005-1005.	7.8	86
22	Normal ground state of dense relativistic matter in a magnetic field. Physical Review D, 2011, 83, .	4.7	82
23	Consistent Chiral Kinetic Theory in Weyl Materials: Chiral Magnetic Plasmons. Physical Review Letters, 2017, 118, 127601.	7.8	76
24	Phase diagram of dense neutral three-flavor quark matter. Nuclear Physics A, 2004, 743, 127-146.	1.5	75
25	Nonstrange hybrid compact stars with color superconducting matter. Physical Review D, 2003, 67, .	4.7	74
26	Derivative expansion of the effective action for quantum electrodynamics in 2+1 and 3+1 dimensions. Journal of Mathematical Physics, 1999, 40, 5406-5439.	1.1	70
27	PHASE TRANSITION INDUCED BY A MAGNETIC FIELD. Modern Physics Letters A, 1998, 13, 1143-1154.	1.2	68
28	Origin of dissipative Fermi arc transport in Weyl semimetals. Physical Review B, 2016, 93, .	3.2	63
29	Dynamical Chiral Symmetry Breaking in QED in a Magnetic Field: Toward Exact Results. Physical Review Letters, 1999, 83, 1291-1294.	7.8	60
30	Derivative expansion for the one-loop effective Lagrangian in QED. Canadian Journal of Physics, 1996, 74, 282-289.	1.1	58
31	Universality and the magnetic catalysis of chiral symmetry breaking. Physical Review D, 1999, 60, .	4.7	58
32	Thermal conductivity of dense quark matter and cooling of stars. Physical Review C, 2002, 66, .	2.9	58
33	Dynamics in the quantum Hall effect and the phase diagram of graphene. Physical Review B, 2008, 78, .	3.2	56
34	Note on color neutrality in Nambu-Jona-Lasinio-type models. Physical Review D, 2005, 72, .	4.7	55
35	Engineering Weyl nodes in Dirac semimetals by a magnetic field. Physical Review B, 2013, 88, .	3.2	55
36	Quark mass effects on the stability of hybrid stars. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2004, 595, 36-43.	4.1	54

#	Article	IF	Citations
37	Anomalous Maxwell equations for inhomogeneous chiral plasma. Physical Review D, 2016, 93, .	4.7	54
38	Radiative corrections to chiral separation effect in QED. Physical Review D, 2013, 88, .	4.7	53
39	Chiral asymmetry of the Fermi surface in dense relativistic matter in a magnetic field. Physical Review C, 2009, 80, .	2.9	51
40	Fast Equilibration of Hadrons in an Expanding Fireball. Physical Review Letters, 2008, 100, 252301.	7.8	50
41	Chiral symmetry breaking in QED in a magnetic field at finite temperature. Physical Review D, 1997, 56, 5251-5253.	4.7	49
42	Edge states, mass and spin gaps, and quantum Hall effect in graphene. Physical Review B, 2008, 77, .	3.2	48
43	Neutrino emission and cooling rates of spin-one color superconductors. Physical Review D, 2006, 73, .	4.7	46
44	Anomalous transport properties of Dirac and Weyl semimetals (Review Article). Low Temperature Physics, 2018, 44, 487-505.	0.6	44
45	Bulk viscosity of spin-one color superconductors with two quark flavors. Physical Review D, 2007, 75, .	4.7	39
46	Dirac semimetals<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>A</mml:mi><mml:mn>3</mml:mn></mml:msub><mml:m xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mo>(</mml:mo><mml:mrow><mml:mi>A</mml:mi><mml:mo>=</mml:mo xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:m. Physical Review B, 2015, 91, .	3.2	38
47	Bulk viscosity of strange quark matter: Urca versus nonleptonic processes. Physical Review D, 2007, 75, .	4.7	37
48	Edge states on graphene ribbons in magnetic field: Interplay between Dirac and ferromagnetic-like gaps. Physical Review B, 2009, 79, .	3.2	37
49	Broken symmetry<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi>Î½</mml:mi><mml:mo>=</mml:mo><mml:mn>0</mml:mn></mml:mrow></mml:math>quantu Hall states in bilayer graphene: Landau level mixing and dynamical screening. Physical Review B, 2012, 85, .	3.2	37
50	Anomalous thermoelectric phenomena in lattice models of multi-Weyl semimetals. Physical Review B, 2017, 96, .	3.2	36
51	Spontaneous rotational symmetry breaking and roton like excitations in gauged Ïƒ-model at finite density. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2004, 581, 82-92.	4.1	34
52	Bound diquarks and their Boseâ€“Einstein condensation in strongly coupled quark matter. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2008, 663, 228-233.	4.1	34
53	Dynamics of chemical equilibrium of hadronic matter close toTc. Physical Review C, 2010, 81, .	2.9	33
54	Chiral asymmetry and axial anomaly in magnetized relativistic matter. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2011, 695, 354-358.	4.1	33

#	Article	IF	Citations
55	Chiral magnetic plasmons in anomalous relativistic matter. Physical Review B, 2017, 95, .	3.2	32
56	Chemical equilibration due to heavy Hagedorn states. Journal of Physics G: Nuclear and Particle Physics, 2005, 31, S725-S732.	3.6	30
57	Second-order chiral kinetic theory: Chiral magnetic and pseudomagnetic waves. Physical Review B, 2017, 95, .	3.2	29
58	Stable gapless superconductivity at strong coupling. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2006, 637, 367-373.	4.1	28
59	Phase diagram of neutral quark matter: The effect of neutrino trapping. Physical Review D, 2006, 73, .	4.7	28
60	Longitudinal gluons and Nambu-Goldstone bosons in a two-flavor color superconductor. Physical Review D, 2002, 66, .	4.7	27
61	Gluonic phase versus LOFF phase in two-flavor quark matter. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2006, 643, 331-335.	4.1	27
62	Consistent hydrodynamic theory of chiral electrons in Weyl semimetals. Physical Review B, 2018, 97, .	3.2	27
63	Pseudomagnetic helicons. Physical Review B, 2017, 95, .	3.2	26
64	Surface Fermi arcs in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi mathvariant="double-struck">Z</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:math>Weyl semimetals<mml:math		

#	Article	IF	Citations
73	Fractal structure of the effective action in (quasi)planar models with long-range interactions. Physics Letters, Section A: General, Atomic and Solid State Physics, 2003, 313, 472-477.	2.1	21
74	Bethe-Salpeter equation for diquarks in color-flavor locked phase of cold dense QCD. Physical Review D, 2001, 63, .	4.7	20
75	Coulomb interaction and magnetic catalysis in the quantum Hall effect in graphene. Physica Scripta, 2012, T146, 014018.	2.5	20
76	Collective modes of colorâ€“flavor locked phase of dense QCD at finite temperature. Nuclear Physics A, 2002, 700, 577-617.	1.5	19
77	Hydrodynamics of Fermi arcs: Bulk flow and surface collective modes. Physical Review B, 2019, 99, .	3.2	19
78	Diquarks in cold dense QCD with two flavors. Physical Review D, 2000, 62, .	4.7	18
79	Thermal rates for baryon and antibaryon production. Physical Review C, 2003, 68, .	2.9	18
80	Bulk viscosity of spin-one color superconducting strange quark matter. Physical Review D, 2010, 82, .	4.7	18
81	Coexistence and competition of nematic and gapped states in bilayer graphene. Physical Review B, 2012, 86, .	3.2	18
82	Pulsar Kicks via Spin-1 Color Superconductivity. Physical Review Letters, 2005, 94, 211101.	7.8	17
83	Edge states in quantum Hall effect in graphene (Review Article). Low Temperature Physics, 2008, 34, 778-789.	0.6	17
84	Wigner function and kinetic phenomena for chiral plasma in a strong magnetic field. Journal of High Energy Physics, 2017, 2017, 1.	4.7	17
85	Pseudomagnetic lens as a valley and chirality splitter in Dirac and Weyl materials. Physical Review B, 2017, 95, .	3.2	16
86	Hydrodynamic electron flow in a Weyl semimetal slab: Role of Chern-Simons terms. Physical Review B, 2018, 97, .	3.2	16
87	Collective excitations in Weyl semimetals in the hydrodynamic regime. Journal of Physics Condensed Matter, 2018, 30, 275601.	1.8	16
88	LargeNdynamics in QED in a magnetic field. Physical Review D, 2003, 67, .	4.7	15
89	Optically opaque color-flavor locked phase inside compact stars. Physical Review C, 2003, 67, .	2.9	15
90	Gapless phases of colour-superconducting matter. Journal of Physics G: Nuclear and Particle Physics, 2005, 31, S849-S855.	3.6	14

#	Article	IF	Citations
91	Nonlocal transport in Weyl semimetals in the hydrodynamic regime. Physical Review B, 2018, 98, .	3.2	14
92	Hydrodynamic modes in a magnetized chiral plasma with vorticity. Physical Review D, 2019, 99, .	4.7	14
93	Chiral symmetry breaking by a non-Abelian external field in 2+1 dimensions. Physical Review D, 1998, 57, 5230-5235.	4.7	13
94	Photon polarization tensor in a magnetized plasma: Absorptive part. Physical Review D, 2021, 104, .	4.7	13
95	Gross-Neveu model and the supersymmetric and nonsupersymmetric Nambuâ€”Jona-Lasinio model in a magnetic field. Physical Review D, 1996, 54, 7884-7893.	4.7	12
96	Chiral asymmetry in QED matter in a magnetic field. Physical Review D, 2013, 88, .	4.7	12
97	Quantum oscillations as a probe of interaction effects in Weyl semimetals in a magnetic field. Physical Review B, 2014, 90, .	3.2	12
98	Chiral response in lattice models of Weyl materials. Physical Review B, 2017, 96, .	3.2	12
99	Surprises in relativistic matter in a magnetic field. Progress in Particle and Nuclear Physics, 2012, 67, 547-551.	14.4	9
100	Thermalization through Hagedorn states: the importance of multiparticle collisions. Journal of Physics G: Nuclear and Particle Physics, 2010, 37, 094017.	3.6	8
101	Chiral asymmetry in cold QED plasma in a strong magnetic field. Physical Review D, 2014, 90, .	4.7	8
102	Masses of the pseudo Nambu-Goldstone bosons in the two flavor color superconducting phase. Physical Review D, 2001, 64, .	4.7	7
103	Bulk viscosity in the nonlinear and anharmonic regimes of strange quark matter. New Journal of Physics, 2011, 13, 045018.	2.9	7
104	Non-Abelian properties of electron wave packets in the Dirac semimetals <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>A</mml:mi><mml:mn>3</mml:mn></mml:msub><mml:m (<mml:math) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 222 Td (xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>A</mml:m Physical Review B, 2018, 98, .	3.2	7
105	Electronic Properties of Strained Doubleâ€Weyl Systems. Annalen Der Physik, 2018, 530, 1800219.	2.4	7
106	Next to leading order effective potential in the 2+1 dimensional Nambuâ€“Jona-Lasinio model at finite temperature. Physical Review D, 1998, 58, .	4.7	6
107	Effective potential of composite fields in weakly coupled QED in a uniform external magnetic field. Physical Review D, 1999, 59, .	4.7	6
108	Physical Gauge in the Problem of Dynamical Chiral Symmetry Breaking in QED in a Magnetic Field. Foundations of Physics, 2000, 30, 349-357.	1.3	6

#	Article	IF	Citations
109	Color superconductivity and nondecoupling phenomena in (2+1)-dimensional QCD. Physical Review D, 2001, 64, .	4.7	6
110	Bose-Einstein Condensation of Diquark Molecules in Three-Flavor Quark Matter. Progress of Theoretical Physics Supplement, 2007, 168, 389-396.	0.1	6
111	Chemical equilibration of baryons in an expanding fireball. European Physical Journal: Special Topics, 2008, 155, 61-66.	2.6	6
112	Electrified magnetic catalysis in three-dimensional topological insulators. Physical Review B, 2016, 94, .	3.2	6
113	Inter-node superconductivity in strained Weyl semimetals. Journal of Physics Condensed Matter, 2019, 31, 055602.	1.8	6
114	Polarization tensor of magnetized quark-gluon plasma at nonzero baryon density. European Physical Journal C, 2021, 81, 1.	3.9	6
115	Comment on â€œElectron Mass Operator in a Strong Magnetic Field and Dynamical Chiral Symmetry Breakingâ€• Physical Review Letters, 2003, 90, 089101; author reply 089102.	7.8	5
116	SU(2) Yang-Mills theory with extended supersymmetry in a background magnetic field. Physical Review D, 1999, 59, .	4.7	4
117	Chemical Equilibration and Transport Properties of Hadronic Matter near <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si1.gif" overflow="scroll"><mml:msub><mml:mi>T</mml:mi><mml:mi>c</mml:mi></mml:msub></mml:math>. Nuclear Physics A, 2009, 830, 745c-748c.	1.5	4
118	Generalized Landau level representation: Effect of static screening in the quantum Hall effect in graphene. Physical Review B, 2016, 93, .	3.2	4
119	Diquark composites in the color superconducting phase of two flavor dense QCD. Nuclear Physics, Section B, Proceedings Supplements, 2001, 102-103, 385-390.	0.4	3
120	Carlson-Goldman modes in the color superconducting phase of dense QCD. Physical Review D, 2001, 64, .	4.7	3
121	Nonleptonic weak processes in spin-one color superconducting quark matter. Physical Review D, 2010, 81, .	4.7	3
122	Strong suppression of electron convection in Dirac and Weyl semimetals. Physical Review B, 2021, 104, .	3.2	3
123	COLLECTIVE MODES IN COLOR SUPERCONDUCTING MATTER. International Journal of Modern Physics A, 2002, 17, 904-913.	1.5	2
124	Current status in color superconductivity. Nuclear Physics A, 2007, 785, 36-43.	1.5	2
125	Directional dependence of a color superconducting gap in two-flavor QCD in a magnetic field. Physical Review D, 2012, 85, .	4.7	2
126	Collective modes in colour superconducting matter. Journal of Physics G: Nuclear and Particle Physics, 2002, 28, 1877-1884.	3.6	1

#	Article	IF	Citations
127	ANALYSIS OF FARADAY ROTATION AND MAGNETO-OPTICAL TRANSMISSION IN MONOLAYER GRAPHENE. International Journal of Modern Physics B, 2014, 28, 1450061.	2.0	1
128	NEUTRAL DENSE QUARK MATTER. , 2006, , 225-239.		1
129	Entropy Wave Instability in Dirac and Weyl Semimetals. Physical Review Letters, 2021, 127, 176602.	7.8	1
130	Mass generation in the supersymmetric Nambu-Jona-Lasinio model in an external magnetic field. , 1998, , 182-186.		0
131	THE SPECTRUM OF DIQUARK COMPOSITES IN COLD DENSE QCD. International Journal of Modern Physics A, 2001, 16, 1271-1273.	1.5	0
132	Asymmetric neutrino emission from spin-1 color superconductor. AIP Conference Proceedings, 2006, , .	0.4	0
133	Cooling Rates of Anisotropic Color Superconductors. Acta Physica Hungarica A Heavy Ion Physics, 2006, 27, 319-322.	0.4	0
134	Chiral asymmetry in relativistic matter in a magnetic field. , 2009, , .		0
135	Response of Dense Relativistic Matter to a Magnetic Field. Progress of Theoretical Physics Supplement, 2010, 186, 471-478.	0.1	0
136	Chiral shift in dense relativistic matter in a strong magnetic field[sup 1]. AIP Conference Proceedings, 2011, , .	0.4	0
137	Fast chemical equilibration of hadrons in an expanding fireball. Indian Journal of Physics, 2011, 85, 819-824.	1.8	0
138	Axial anomaly and chiral asymmetry in magnetized relativistic matter. , 2012, , .		0
139	Theory of Gapless Superconductivity in Quark Matter. , 2004, , 329-336.		0
140	THE GAPLESS 2SC PHASE. , 2005, , .		0