

Igor F Herbut

List of Publications by Year in descending order

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66
papers

3,618
citations

126907

33
h-index

133252

59
g-index

67
all docs

67
docs citations

67
times ranked

1586
citing authors

#	ARTICLE	IF	CITATIONS
1	Interactions and Phase Transitions on Graphene's Honeycomb Lattice. Physical Review Letters, 2006, 97, 146401.	7.8	417
2	Theory of interacting electrons on the honeycomb lattice. Physical Review B, 2009, 79, .	3.2	239
3	Pinning the Order: The Nature of Quantum Criticality in the Hubbard Model on Honeycomb Lattice. Physical Review X, 2013, 3, .	8.9	226
4	Coulomb Interaction, Ripples, and the Minimal Conductivity of Graphene. Physical Review Letters, 2008, 100, 046403.	7.8	205
5	Relativistic Mott criticality in graphene. Physical Review B, 2009, 80, .	3.2	155
6	Density of States Scaling at the Semimetal to Metal Transition in Three Dimensional Topological Insulators. Physical Review Letters, 2014, 112, 016402.	7.8	145
7	Antiferromagnetism from Phase Disordering of d-Wave Superconductor. Physical Review Letters, 2002, 88, 047006.	7.8	134
8	Topological Mott Insulator in Three-Dimensional Systems with Quadratic Band Touching. Physical Review Letters, 2014, 113, 106401.	7.8	127
9	Four-loop critical exponents for the Gross-Neveu-Yukawa models. Physical Review D, 2017, 96, .	4.7	105
10	Antiferromagnetic critical point on graphene's honeycomb lattice: A functional renormalization group approach. Physical Review B, 2014, 89, .	3.2	91
11	The role of electron-electron interactions in two-dimensional Dirac fermions. Science, 2018, 361, 570-574.	12.6	82
12	Quantum superconducting criticality in graphene and topological insulators. Physical Review B, 2013, 87, .	3.2	78
13	Coulomb interaction at the metal-insulator critical point in graphene. Physical Review B, 2009, 80, .	3.2	72
14	Conductivity of interacting massless Dirac particles in graphene: Collisionless regime. Physical Review B, 2010, 82, .	3.2	68
15	Permanent Confinement in the Compact QED ₃ with Fermionic Matter. Physical Review Letters, 2003, 91, 171601.	7.8	66
16	Nematic quantum criticality in three-dimensional Fermi system with quadratic band touching. Physical Review B, 2015, 92, .	3.2	65
17	Superconducting quantum criticality in three-dimensional Luttinger semimetals. Physical Review B, 2016, 93, .	3.2	61
18	Unconventional Superconductivity in Luttinger Semimetals: Theory of Complex Tensor Order and the Emergence of the Uniaxial Nematic State. Physical Review Letters, 2018, 120, 057002.	7.8	57

#	ARTICLE	IF	CITATIONS
19	Phase diagram of the Kane-Mele-Coulomb model. Physical Review B, 2014, 90, .	3.2	56
20	Gross-Neveu-Yukawa model at three loops and Ising critical behavior of Dirac systems. Physical Review B, 2017, 96, .	3.2	56
21	Topological Insulator in the Core of the Superconducting Vortex in Graphene. Physical Review Letters, 2010, 104, 066404.	7.8	49
22	Phase diagram of electronic systems with quadratic Fermi nodes in $2+1$ dimensions. Physical Review B, 2017, 95, .	3.2	49
23	Fluctuation-induced continuous transition and quantum criticality in Dirac semimetals. Physical Review B, 2017, 96, .	3.2	48
24	Effective Theory of High-Temperature Superconductors. Physical Review Letters, 2005, 94, 237001.	7.8	47
25	Interaction-induced anomalous quantum Hall state on the honeycomb lattice. Physical Review B, 2014, 89, .	3.2	45
26	Abelian Higgs model at four loops, fixed-point collision, and deconfined criticality. Physical Review B, 2019, 100, .	3.2	45
27	Emergent Lorentz symmetry near fermionic quantum critical points in two and three dimensions. Journal of High Energy Physics, 2016, 2016, 1-19.	4.7	44
28	Occurrence of nematic, topological, and Berry phases when a flat and a parabolic band touch. Physical Review B, 2014, 90, .	3.2	43
29	Zero-Energy States and Fragmentation of Spin in the Easy-Plane Antiferromagnet on a Honeycomb Lattice. Physical Review Letters, 2007, 99, 206404.	7.8	41
30	Gauge-field-assisted Kosterlitz-Thouless quantum criticality. Physical Review B, 2016, 94, .	3.2	41
31	Anisotropy induces non-Fermi-liquid behavior and nematic magnetic order in three-dimensional Luttinger semimetals. Physical Review B, 2017, 95, .	3.2	38
32	Isospin of topological defects in Dirac systems. Physical Review B, 2012, 85, .	3.2	36
33	Zero-Temperatured-Wave Superconducting Phase Transition. Physical Review Letters, 2000, 85, 1532-1535.	7.8	35
34	Excitonic instability of three-dimensional gapless semiconductors: Large- N theory. Physical Review B, 2016, 93, .	3.2	33
35	Mott multicriticality of Dirac electrons in graphene. Physical Review B, 2015, 92, .	3.2	28
36	Competition of density waves and quantum multicritical behavior in Dirac materials from functional renormalization. Physical Review B, 2016, 93, .	3.2	28

#	ARTICLE	IF	CITATIONS
37	Fermion-induced quantum criticality with two length scales in Dirac systems. Physical Review B, 2018, 97, .	3.2	27
38	Stable Skyrmions in Spinor Condensates. Physical Review Letters, 2006, 97, 080403.	7.8	24
39	$\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"} \rangle \langle \text{mml:mi} \rangle d \langle \text{mml:mi} \rangle \langle \text{mml:math} \rangle$ -wave superconductivity and Bogoliubov-Fermi surfaces in Rarita-Schwinger-Weyl semimetals. Physical Review B, 2020, 101, .	3.2	24
40	Compatible orders and fermion-induced emergent symmetry in Dirac systems. Physical Review B, 2018, 97, .	3.2	23
41	Universal conductivity of graphene in the ultrarelativistic regime. Physical Review B, 2013, 87, .	3.2	21
42	Bogoliubov-Fermi Surfaces in Noncentrosymmetric Multicomponent Superconductors. Physical Review Letters, 2020, 125, 237004.	7.8	20
43	Time reversal, fermion doubling, and the masses of lattice Dirac fermions in three dimensions. Physical Review B, 2011, 83, .	3.2	15
44	Tensor O(N) model near six dimensions: Fixed points and conformal windows from four loops. Physical Review D, 2018, 98, .	4.7	13
45	Skyrmion in spinor condensates and its stability in trap potentials. Physical Review A, 2009, 79, . Critical $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"} \rangle \langle \text{mml:mi} \rangle O \langle \text{mml:mi} \rangle \langle \text{mml:mo} \rangle$ $\text{stretchy="false"} \rangle \langle \text{mml:mo} \rangle \langle \text{mml:mn} \rangle 2 \langle \text{mml:mn} \rangle \langle \text{mml:mo} \rangle T_j \text{ETQq0 0 0 rgBT /Overlock 10 Tf 50 387 Td (stretchy="false")} \langle \text{mml:mo} \rangle$	2.5	12
46	$\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"} \rangle \langle \text{mml:mi} \rangle O \langle \text{mml:mi} \rangle \langle \text{mml:mo} \rangle$ $\text{stretchy="false"} \rangle \langle \text{mml:mo} \rangle \langle \text{mml:mn} \rangle 3 \langle \text{mml:mn} \rangle \langle \text{mml:mo} \rangle T_j \text{ETQq0 0 0 rgBT /Overlock 10 Tf 50 357 Td (stretchy="false")} \langle \text{mml:mo} \rangle$	4.7	12
47	Critical phenomena at the complex tensor ordering phase transition. Physical Review B, 2018, 97, .	3.2	11
48	Critical $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mi} \rangle O \langle \text{mml:mi} \rangle \langle \text{mml:mo} \rangle$ $\text{stretchy="false"} \rangle \langle \text{mml:mo} \rangle \langle \text{mml:mn} \rangle 2 \langle \text{mml:mn} \rangle \langle \text{mml:mo} \rangle T_j \text{ETQq0 0 0 rgBT /Overlock 10 Tf 50 297 Td (stretchy="false")} \langle \text{mml:mo} \rangle$ loop. Physical Review D, 2018, 97, .	4.7	11
49	Ground state of the three-dimensional BCS $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"} \rangle \langle \text{mml:mi} \rangle d \langle \text{mml:mi} \rangle \langle \text{mml:math} \rangle$ -wave superconductor. Physical Review B, 2019, 100, .	3.2	10
50	Dirac Hamiltonians for bosonic spectra. Physical Review Research, 2020, 2, .	3.6	10
51	Conserved charges of order-parameter textures in Dirac systems. Physical Review B, 2012, 86, .	3.2	8
52	Bogoliubov-Fermi surface with inversion symmetry and electron-electron interactions: Relativistic analogies and lattice theory. Physical Review B, 2021, 103, .	3.2	8
53	Hydrodynamic transport in the Luttinger-Abrikosov-Beneslavskii non-Fermi liquid. Physical Review B, 2020, 101, .	3.2	7
54	Hidden role of antiunitary operators in Fierz transformation. Physical Review D, 2019, 100, .	4.7	6

#	ARTICLE	IF	CITATIONS
55	Nematic Quantum Criticality in Dirac Systems. Physical Review Letters, 2022, 128, 157203.	7.8	6
56	Electrons in graphene: an interacting fluid par excellence. Physics Magazine, 2009, 2, .	0.1	5
57	Time-reversal symmetry breaking and d-wave superconductivity of triple-point fermions. Physical Review B, 2021, 104, .	3.2	4
58	Quadratic band touching with long-range interactions in and out of equilibrium. Physical Review B, 2016, 94, .	3.2	3
59	p -wave superconductivity and the axiplanar phase of triple-point fermions. Physical Review B, 2021, 104, .	3.2	3
60	p -wave superconductivity in Luttinger semimetals. Physical Review B, 2022, 105, .	3.2	3
61	MEAN-FIELD TRANSITION TEMPERATURE OF STRONGLY DISORDERED SUPERCONDUCTORS. International Journal of Modern Physics B, 2000, 14, 575-587.	2.0	2
62	Theory of strongly phase fluctuating d-wave superconductors and the spin response in underdoped cuprates. Physica C: Superconductivity and Its Applications, 2004, 408-410, 414-415.	1.2	2
63	Excitons in QED3 and spin response in a phase-fluctuating d-wave superconductor. Physical Review B, 2007, 76, .	3.2	2
64	Half vortex and fractional electrical charge in two dimensions. Physical Review B, 2016, 93, .	3.2	1
65	Response to Comment on "The role of electron-electron interactions in two-dimensional Dirac fermions". Science, 2019, 366, .	12.6	1
66	Emergent Lorentz symmetry near fermionic quantum critical points in two and three dimensions. , 2016, 2016, 1.		1