

# Oskar Vafek

## List of Publications by Year in descending order

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51  
papers

3,874  
citations

186209

28  
h-index

182361

51  
g-index

51  
all docs

51  
docs citations

51  
times ranked

3235  
citing authors

#	ARTICLE	IF	CITATIONS
1	Trions in twisted bilayer graphene. Physical Review B, 2022, 105, .	1.1	11
2	Tuning electron correlation in magic-angle twisted bilayer graphene using Coulomb screening. Science, 2021, 371, 1261-1265.	6.0	151
3	Lattice model for the Coulomb interacting chiral limit of magic-angle twisted bilayer graphene: Symmetries, obstructions, and excitations. Physical Review B, 2021, 104, .	1.1	21
4	Realization of topological Mott insulator in a twisted bilayer graphene lattice model. Nature Communications, 2021, 12, 5480.	5.8	50
5	Cascades between Light and Heavy Fermions in the Normal State of Magic-Angle Twisted Bilayer Graphene. Physical Review Letters, 2021, 127, 266402.	2.9	44
6	Non-Abelian Dirac node braiding and near-degeneracy of correlated phases at odd integer filling in magic-angle twisted bilayer graphene. Physical Review B, 2020, 102, .	1.1	97
7	Diagnosis of explicit symmetry breaking in the tight-binding constructions for symmetry-protected topological systems. Physical Review B, 2020, 102, .	1.1	7
8	Renormalization Group Study of Hidden Symmetry in Twisted Bilayer Graphene with Coulomb Interactions. Physical Review Letters, 2020, 125, 257602.	2.9	80
9	Strong Coupling Phases of Partially Filled Twisted Bilayer Graphene Narrow Bands. Physical Review Letters, 2019, 122, 246401.	2.9	243
10	Quantum anomalous Hall insulator stabilized by competing interactions. Physical Review B, 2018, 98, .	1.1	17
11	Symmetry, Maximally Localized Wannier States, and a Low-Energy Model for Twisted Bilayer Graphene Narrow Bands. Physical Review X, 2018, 8, .	2.8	265
12	Classification of symmetry derived pairing at the $M$ point in FeSe. Physical Review B, 2018, 98, .	1.1	17
13	Hund Interaction, Spin-Orbit Coupling, and the Mechanism of Superconductivity in Strongly Hole-Doped Iron Pnictides. Physical Review Letters, 2017, 118, 087003.	2.9	52
14	Entanglement of exact excited eigenstates of the Hubbard model in arbitrary dimension. SciPost Physics, 2017, 3, .	1.5	65
15	Displacement and annihilation of Dirac gap nodes in $d$ -wave iron-based superconductors. Physical Review B, 2016, 94, .	1.1	15
16	Emergence of superconductivity in a doped single-valley quadratic band crossing system of spin- $\frac{1}{2}$ . Physical Review B, 2015, 91, .	1.1	6
17	Majorana bands, Berry curvature, and thermal Hall conductivity in the vortex state of a chiral $p$ -wave superconductor. Physical Review B, 2015, 92, .	1.1	20
18	Intrinsic thermal Hall conductivity in the mixed state of $d$ -wave superconductors: From wave-packet dynamics to scaling. Physical Review B, 2015, 92, .	1.1	1

#	ARTICLE	IF	CITATIONS
19	Berry phases and the intrinsic thermal Hall effect in high-temperature cuprate superconductors. Nature Communications, 2015, 6, 6518.	5.8	17
20	Incommensurate spin density wave at a ferromagnetic quantum critical point in a three-dimensional parabolic semimetal. Physical Review B, 2015, 92, .	1.1	13
21	Distinguishing spin-orbit coupling and nematic order in the electronic spectrum of iron-based superconductors. Physical Review B, 2014, 90, .	1.1	55
22	Renormalization group study of interaction-driven quantum anomalous Hall and quantum spin Hall phases in quadratic band crossing systems. Physical Review B, 2014, 89, .	1.1	49
23	Unconventional superconductivity in a two-dimensional repulsive gas of fermions with spin-orbit coupling. Physica C: Superconductivity and Its Applications, 2014, 497, 6-18.	0.6	11
24	Dirac Fermions in Solids: From High-T <sub>c</sub> Cuprates and Graphene to Topological Insulators and Weyl Semimetals. Annual Review of Condensed Matter Physics, 2014, 5, 83-112.	5.2	495
25	Excitonic and superconducting orders from repulsive interaction on the doped honeycomb bilayer. Physical Review B, 2014, 89, .	1.1	22
26	Superconductivity on the Brink of Spin-Charge Order in a Doped Honeycomb Bilayer. Physical Review Letters, 2014, 112, 147002.	2.9	25
27	Space group symmetry, spin-orbit coupling, and the low-energy effective Hamiltonian for iron-based superconductors. Physical Review B, 2013, 88, .	1.1	134
28	Quantum oscillations of the specific heat in $d$ -wave superconductors with loop current order. Physical Review B, 2013, 88, .	1.1	10
29	Fermions on bilayer graphene: Symmetry breaking for $B=0$ and $\frac{1}{2} \neq 0$ . Physical Review B, 2012, 86, .	1.1	51
30	Geometric phases of $d$ -wave vortices in a model of lattice fermions. Physical Review B, 2012, 86, .	1.1	1
31	Electronic multicriticality in bilayer graphene. Physical Review B, 2012, 86, .	1.1	76
32	Carbon's superconducting footprint. Nature Physics, 2012, 8, 111-112.	6.5	12
33	Quantum Hall effect in a singly and doubly connected three-dimensional topological insulator. Physical Review B, 2011, 84, .	1.1	31
34	Heat capacity through the magnetic-field-induced resistive transition in an underdoped high-temperature superconductor. Nature Physics, 2011, 7, 332-335.	6.5	116
35	Enhancement of superconductivity by a parallel magnetic field in two-dimensional superconductors. Nature Physics, 2011, 7, 895-900.	6.5	77
36	Spin-orbit coupling induced enhancement of superconductivity in a two-dimensional repulsive gas of fermions. Physical Review B, 2011, 84, .	1.1	13

#	ARTICLE	IF	CITATIONS
37	Interacting fermions on the honeycomb bilayer: From weak to strong coupling. Physical Review B, 2010, 82, .	1.1	108
38	Conductivity of interacting massless Dirac particles in graphene: Collisionless regime. Physical Review B, 2010, 82, .	1.1	68
39	Relaxation of nuclear magnetic moments and site-selective NMR in $d$ -wave superconductors. Physical Review B, 2010, 81, .	1.1	2
40	Many-body instability of Coulomb interacting bilayer graphene: Renormalization group approach. Physical Review B, 2010, 81, .	1.1	232
41	Relativistic Mott criticality in graphene. Physical Review B, 2009, 80, .	1.1	155
42	Coulomb Interaction, Ripples, and the Minimal Conductivity of Graphene. Physical Review Letters, 2008, 100, 046403.	2.9	205
43	Renormalization group approach to two-dimensional Coulomb interacting Dirac fermions with random gauge potential. Physical Review B, 2008, 77, .	1.1	71
44	Quantum oscillations in the mixed state of $d$ -wave superconductors. Physical Review B, 2008, 78, .	1.1	24
45	Anomalous Scaling and Gapless Fermions of $d$ -Wave Superconductors in a Magnetic Field. Physical Review Letters, 2007, 99, 047002.	2.9	3
46	Anomalous Thermodynamics of Coulomb-Interacting Massless Dirac Fermions in Two Spatial Dimensions. Physical Review Letters, 2007, 98, 216401.	2.9	73
47	Thermoplasma Polariton within Scaling Theory of Single-Layer Graphene. Physical Review Letters, 2006, 97, 266406.	2.9	133
48	Index Theoretic Characterization of $d$ -Wave Superconductors in the Vortex State. Physical Review Letters, 2006, 96, 167005.	2.9	21
49	Pair Density Wave in the Pseudogap State of High Temperature Superconductors. Physical Review Letters, 2004, 93, 187002.	2.9	152
50	Quantum Criticality of $d$ -Wave Quasiparticles and Superconducting Phase Fluctuations. Physical Review Letters, 2003, 91, 237001.	2.9	17
51	Resonance Light Scattering and Its Application in Determining the Size, Shape, and Aggregation Number for Supramolecular Assemblies of Chromophores. Journal of Physical Chemistry B, 1999, 103, 8474-8481.	1.2	240