

# Alexey A Kovalev

## List of Publications by Year in descending order

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74  
papers

2,165  
citations

185998

28  
h-index

233125

45  
g-index

75  
all docs

75  
docs citations

75  
times ranked

1972  
citing authors

#	ARTICLE	IF	CITATIONS
1	Magnon Spin Nernst Effect in Antiferromagnets. Physical Review Letters, 2016, 117, 217203.	2.9	139
2	Spin transfer in diffusive ferromagnetâ€“normal metal systems with spin-flip scattering. Physical Review B, 2002, 66, .	1.1	99
3	Thermomagnonic spin transfer and Peltier effects in insulating magnets. Europhysics Letters, 2012, 97, 67002.	0.7	94
4	Deep subnanosecond spin torque switching in magnetic tunnel junctions with combined in-plane and perpendicular polarizers. Applied Physics Letters, 2011, 98, .	1.5	82
5	Reversible spin texture in ferroelectric $\text{HfO}_2$ . Physical Review B, 2017, 95, .	1.1	80
6	Anomalous Hall effect in a two-dimensional electron gas. Physical Review B, 2007, 76, .	1.1	76
7	Current-driven ferromagnetic resonance, mechanical torques, and rotary motion in magnetic nanostructures. Physical Review B, 2007, 75, .	1.1	74
8	Semiclassical framework for the calculation of transport anisotropies. Physical Review B, 2009, 79, .	1.1	66
9	Stability of skyrmion lattices and symmetries of quasi-two-dimensional chiral magnets. Physical Review B, 2016, 93, .	1.1	65
10	Anisotropic magnetoresistance of spin-orbit coupled carriers scattered from polarized magnetic impurities. Physical Review B, 2009, 80, .	1.1	61
11	Fault tolerance of quantum low-density parity check codes with sublinear distance scaling. Physical Review A, 2013, 87, .	1.0	61
12	Spin torque and Nernst effects in Dzyaloshinskii-Moriya ferromagnets. Physical Review B, 2016, 93, .	1.1	59
13	Transport theory for disordered multiple-band systems: Anomalous Hall effect and anisotropic magnetoresistance. Physical Review B, 2009, 79, .	1.1	55
14	Skyrmionic spin Seebeck effect via dissipative thermomagnonic torques. Physical Review B, 2014, 89, .	1.1	55
15	Anomalous Hall Effect in Disordered Multiband Metals. Physical Review Letters, 2010, 105, 036601.	2.9	54
16	Magnetoelectric domain wall dynamics and its implications for magnetoelectric memory. Applied Physics Letters, 2016, 108, .	1.5	50
17	Skyrmions and Antiskyrmions in Quasi-Two-Dimensional Magnets. Frontiers in Physics, 2018, 6, .	1.0	49
18	Nanomechanical Magnetization Reversal. Physical Review Letters, 2005, 94, 167201.	2.9	48

#	ARTICLE	IF	CITATIONS
19	Theory of Spin Loss at Metallic Interfaces. <i>Physical Review Letters</i> , 2016, 117, 207204.	2.9	47
20	Quantum Kronecker sum-product low-density parity-check codes with finite rate. <i>Physical Review A</i> , 2013, 88, .	1.0	45
21	Thermoelectric spin transfer in textured magnets. <i>Physical Review B</i> , 2009, 80, .	1.1	41
22	Macrospin Tunneling and Magnetopolaritons with Nanomechanical Interference. <i>Physical Review Letters</i> , 2011, 106, 147203.	2.9	41
23	Evolution of the Fermi surface of cuprates on the basis of the spin-polaron approach. <i>Journal of Experimental and Theoretical Physics</i> , 2001, 92, 677-695.	0.2	40
24	Magnetic skyrmion bubble motion driven by surface acoustic waves. <i>Applied Physics Letters</i> , 2018, 112, .	1.5	36
25	First-principles calculation of spin-orbit torque in a Co/Pt bilayer. <i>Physical Review Materials</i> , 2019, 3, .	0.9	34
26	Boundary spin Hall effect in a two-dimensional semiconductor system with Rashba spin-orbit coupling. <i>Physical Review B</i> , 2007, 76, .	1.1	32
27	Stabilization and control of Majorana bound states with elongated skyrmions. <i>Physical Review B</i> , 2018, 97, .	1.1	31
28	Perpendicular spin valves with ultrathin ferromagnetic layers: Magnetoelectronic circuit investigation of finite-size effects. <i>Physical Review B</i> , 2006, 73, .	1.1	28
29	Aharonov-Casher and spin Hall effects in mesoscopic ring structures with strong spin-orbit interaction. <i>Physical Review B</i> , 2008, 78, .	1.1	28
30	Hybrid skew scattering regime of the anomalous Hall effect in Rashba systems: Unifying Keldysh, Boltzmann, and Kubo formalisms. <i>Physical Review B</i> , 2008, 78, .	1.1	26
31	Spin Hall and Nernst effects of Weyl magnons. <i>Physical Review B</i> , 2018, 97, .	1.1	25
32	Magnetovibrational coupling in small cantilevers. <i>Applied Physics Letters</i> , 2003, 83, 1584-1586.	1.5	24
33	Improved quantum hypergraph-product LDPC codes. , 2012, , .		24
34	Magnetocaloritronic nanomachines. <i>Solid State Communications</i> , 2010, 150, 500-504.	0.9	23
35	Chiral topological insulator of magnons. <i>Physical Review B</i> , 2018, 97, .	1.1	23
36	Aharonov-Casher effect in a two-dimensional hole ring with spin-orbit interaction. <i>Physical Review B</i> , 2007, 76, .	1.1	22

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37	Interfacial contributions to spin-orbit torque and magnetoresistance in ferromagnet/heavy-metal bilayers. <i>Physical Review B</i> , 2020, 101, .	1.1	22
38	Intrinsic spin Nernst effect of magnons in a noncollinear antiferromagnet. <i>Physical Review Research</i> , 2020, 2, .	1.3	22
39	Thresholds for Correcting Errors, Erasures, and Faulty Syndrome Measurements in Degenerate Quantum Codes. <i>Physical Review Letters</i> , 2015, 115, 050502.	2.9	21
40	Design of additive quantum codes via the code-word-stabilized framework. <i>Physical Review A</i> , 2011, 84, .	1.0	19
41	Spin Transfer of Quantum Information between Majorana Modes and a Resonator. <i>Physical Review Letters</i> , 2014, 112, 106402.	2.9	19
42	The origin and control of the sources of AMR in (Ga,Mn)As devices. <i>Journal of Magnetism and Magnetic Materials</i> , 2009, 321, 1001-1008.	1.0	18
43	Magnetoelectric control of topological phases in graphene. <i>Physical Review B</i> , 2019, 100, .	1.1	17
44	Numerical and analytical bounds on threshold error rates for hypergraph-product codes. <i>Physical Review A</i> , 2018, 97, .	1.0	13
45	Spirals and skyrmions in antiferromagnetic triangular lattices. <i>Physical Review Materials</i> , 2021, 5, .	0.9	13
46	Boundary twists, instabilities, and creation of skyrmions and antiskyrmions. <i>Physical Review Materials</i> , 2018, 2, .	0.9	13
47	Spin-polaron excitations in the two-dimensional Kondo lattice with spin frustration. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2000, 265, 221-224.	0.9	12
48	Generalized magnetoelectronic circuit theory and spin relaxation at interfaces in magnetic multilayers. <i>Physical Review B</i> , 2020, 101, .	1.1	11
49	Distance Verification for Classical and Quantum LDPC Codes. <i>IEEE Transactions on Information Theory</i> , 2017, 63, 4675-4686.	1.5	10
50	Pumping of magnons in a Dzyaloshinskii-Moriya ferromagnet. <i>Physical Review B</i> , 2017, 95, .	1.1	10
51	Magnonic analog of the Edelstein effect in antiferromagnetic insulators. <i>Physical Review B</i> , 2020, 101, .	1.1	10
52	Magnetomechanical Torques in Small Magnetic Cantilevers. <i>Japanese Journal of Applied Physics</i> , 2006, 45, 3878-3888.	0.8	9
53	Valley-dependent Lorentz force and Aharonov-Bohm phase in strained graphene p <sup>n</sup> n junction. <i>Physical Review B</i> , 2019, 99, .	1.1	9
54	Demonstrating entanglement by testing Bell's theorem in Majorana wires. <i>Physical Review B</i> , 2014, 90, .	1.1	8

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55	Magnon Landau Levels and Spin Responses in Antiferromagnets. <i>Physical Review Letters</i> , 2020, 125, 257201.	2.9	8
56	Thermal stability characterization of magnetic tunnel junctions using hard-axis magnetoresistance measurements. <i>Journal of Applied Physics</i> , 2011, 109, 07C708.	1.1	7
57	Magnetization pumping and dynamics in a Dzyaloshinskii-Moriya magnet. <i>Europhysics Letters</i> , 2015, 109, 67008.	0.7	7
58	Spin superfluidity in noncollinear antiferromagnets. <i>Physical Review B</i> , 2021, 103, .	1.1	7
59	On the splitting of the lower band of charged elementary excitations of a two-dimensional antiferromagnet. <i>JETP Letters</i> , 1998, 68, 412-416.	0.4	6
60	Piezospin Polarization of Currents in Nanostructures. <i>Physical Review Letters</i> , 2008, 101, 036401.	2.9	6
61	Continuous third harmonic generation in a terahertz driven modulated nanowire. <i>Journal of Applied Physics</i> , 2015, 117, 213103.	1.1	6
62	Theory of magnon motive force in chiral ferromagnets. <i>Physical Review B</i> , 2016, 94, .	1.1	5
63	A new twist on a classic experiment. <i>Nature Nanotechnology</i> , 2008, 3, 710-711.	15.6	3
64	Numerical techniques for finding the distances of quantum codes. , 2014, , .		3
65	Duality and free energy analyticity bounds for few-body Ising models with extensive homology rank. <i>Journal of Mathematical Physics</i> , 2019, 60, 083302.	0.5	3
66	Regular and in-plane skyrmions and antiskyrmions from boundary instabilities. <i>Physical Review B</i> , 2021, 104, .	1.1	3
67	Transport properties of double quantum wires with correlated disorder. <i>Solid State Communications</i> , 2001, 117, 291-296.	0.9	2
68	Ultrafast spin torque memory based on magnetic tunnel junctions with combined in-plane and perpendicular polarizers. , 2012, , .		1
69	Parafermion stabilizer codes. <i>Physical Review A</i> , 2014, 90, .	1.0	1
70	Control of Majorana edge modes by a g-factor engineered nanowire spin transistor. <i>Solid State Communications</i> , 2014, 198, 66-70.	0.9	1
71	Superfluid spin transistor. <i>Physical Review Research</i> , 2022, 4, .	1.3	1
72	Magnetovibrational magnetization dynamics. <i>Journal of Magnetism and Magnetic Materials</i> , 2004, 272-276, E1593-E1594.	1.0	0

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73	Linked-cluster technique for finding the distance of a quantum LDPC code. , 2013, , .		0
74	Distance verification for LDPC codes. , 2016, , .		0