Jan Kunes

List of Publications by Year
in descending order

118 papers	7,419 citations	70961 41 h-index	53109 85 g-index
123 all docs	123 docs citations	123 times ranked	7464 citing authors

#	Article	IF	Citations
1	Electrical switching of an antiferromagnet. Science, 2016, 351, 587-590.	6.0	1,049
2	Room-temperature antiferromagnetic memory resistor. Nature Materials, 2014, 13, 367-374.	13.3	546
3	Quantum Spin Hall Effect in a Transition Metal Oxide<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi>Na</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:msub><mml:mi>IrO</mml:mi><mml:m Physical Review Letters, 2009, 102, 256403.	2.9	435
4	Wien2wannier: From linearized augmented plane waves to maximally localized Wannier functions. Computer Physics Communications, 2010, 181, 1888-1895.	3.0	383
5	Detection of magnetic circular dichroism using a transmission electron microscope. Nature, 2006, 441, 486-488.	13.7	331
6	Electronic structure of fcc Th: Spin-orbit calculation with6p1/2local orbital extension. Physical Review B, 2001, 64, .	1.1	219
7	Ab Initio Studies on the Interplay between Spin-Orbit Interaction and Coulomb Correlation in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi>Sr</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:msub><mml:mi>IrO</mml:mi><mml:mi><mml: xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi>Ba</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:msub><mml:mi>IrO</mml:mi><mml:mi><mml:m Physical Review Letters, 2012, 108, 086403.	2.9	217
8	Collapse of magnetic moment drives the Mott transition in MnO. Nature Materials, 2008, 7, 198-202.	13.3	175
9	Exact exchange for correlated electrons. Physica Status Solidi (B): Basic Research, 2006, 243, 563-572.	0.7	166
10	Magnetic, magneto-optical, and structural properties of URhAl from first-principles calculations. Physical Review B, 2001, 63, .	1.1	157
11	Phase diagram and gap anisotropy in iron-pnictide superconductors. Physical Review B, 2010, 81, .	1.1	149
12	Oxygen x-ray emission and absorption spectra as a probe of the electronic structure of strongly correlated oxides. Physical Review B, 2008, 77, .	1.1	139
13	NiO: Correlated Band Structure of a Charge-Transfer Insulator. Physical Review Letters, 2007, 99, 156404.	2.9	134
14	Charge disproportionation and spin ordering tendencies inNaxCoO2. Physical Review B, 2004, 70, .	1.1	128
15	First-principles investigation of the damping of fast magnetization precession in ferromagnetic3dmetals. Physical Review B, 2002, 65, .	1.1	110
16	Correlation effects and structural dynamics in theÎ²-pyrochlore superconductorKOs2O6. Physical Review B, 2004, 70, .	1.1	103
17	Optical determination of the NÃ©el vector in a CuMnAs thin-film antiferromagnet. Nature Photonics, 2017, 11, 91-96.	15.6	103
18	Local correlations and hole doping in NiO: A dynamical mean-field study. Physical Review B, 2007, 75, .	1.1	99

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19	Coulomb repulsion and correlation strength in LaFeAsO from density functional and dynamical mean-field theories. Journal of Physics Condensed Matter, 2009, 21, 075602.	0.7	93
20	Superconductivity and Lattice Instability in Compressed Lithium from Fermi Surface Hot Spots. Physical Review Letters, 2006, 96, 047004.	2.9	91
21	Excitonic condensation in systems of strongly correlated electrons. Journal of Physics Condensed Matter, 2015, 27, 333201.	0.7	90
22	Spin state transition and covalent bonding in LaCoO<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>3</mml:mn></mml:msub></mml:math>. Physical Review B, 2012, 86, .	1.1	88
23	Disproportionation and Metallization at Low-Spin to High-Spin Transition in Multiorbital Mott Systems. Physical Review Letters, 2011, 106, 256401.	2.9	77
24	Efficient treatment of two-particle vertices in dynamical mean-field theory. Physical Review B, 2011, 83, .	1.1	71
25	Pressure-Driven Metal-Insulator Transition in Hematite from Dynamical Mean-Field Theory. Physical Review Letters, 2009, 102, 146402.	2.9	70
26	Exchange Coupling in Eu Monochalcogenides from First Principles. Journal of the Physical Society of Japan, 2005, 74, 1408-1411.	0.7	68
27	Anisotropic x-ray magnetic linear dichroism at theL2,3edges of cubic Fe, Co, and Ni:Abinitiocalculations and model theory. Physical Review B, 2003, 67, .	1.1	65
28	Mott transition of MnO under pressure: A comparison of correlated band theories. Physical Review B, 2006, 74, .	1.1	60
29	Crystal field parameters with Wannier functions: Application to rare-earth aluminates. Physical Review B, 2013, 87, .	1.1	60
30	Excitonic instability at the spin-state transition in the two-band Hubbard model. Physical Review B, 2014, 89, .	1.1	57
31	Excitonic condensation of strongly correlated electrons: The case of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mrow><mml:mi mathvariant="normal">Pr</mml:mi></mml:mrow><mml:mrow><mml:mn>0.5</mml:mn></mml:mrow></mml:msub><mml:msub><mml:mi mathvariant="normal">Ca</mml:mi></mml:mrow><mml:mrow><mml:mn>0.5</mml:mn></mml:mrow></mml:msub><mml:msub><mml:mi mathvariant="normal">CoO</mml:mi></mml:mrow><mml:mn>3</mml:mn></mml:msub></mml:math>.	1.1	56
32	Antiferromagnetism in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>RuO</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:math> as <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>d</mml:mi></mml:math> -wave Pomeranchuk instability. Physical Review B, 2019, 99, .	1.1	56
33	Atomically resolved spectroscopic study of Sr2IrO4: Experiment and theory. Scientific Reports, 2013, 3, 3073.	1.6	55
34	Spin State of Negative Charge-Transfer Material<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi>SrCoO</mml:mi><mml:mn>3</mml:mn></mml:msub></mml:math>. Physical Review Letters, 2012, 109, 117206.	2.9	54
35	Observation of the X-Ray Magneto-Optical Voigt Effect. Physical Review Letters, 2001, 87, 047401.	2.9	53
36	Temperature-dependent correlations in covalent insulators: Dynamical mean-field approximation. Physical Review B, 2008, 78, .	1.1	52

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37	Disproportionation, Metal-Insulator Transition, and Critical Interaction Strength inNa1/2CoO2. Physical Review Letters, 2005, 94, 026403.	2.9	50
38	Metal-insulator transition in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>NiS</mml:mtext></mml:mrow><mml:mrow><mml:mn>2</mml:m Physical Review B, 2010, 81, .	1.1	50
39	X-ray Faraday effect at theL2,3edges of Fe, Co, and Ni:â€ƒTheory and experiment. Physical Review B, 2001, 64, .	1.1	49
40	Kondo and anti-Kondo coupling to local moments inEuB6. Physical Review B, 2004, 69, .	1.1	49
41	Doping dependence of spin fluctuations and electron correlations in iron pnictides. Physical Review B, 2010, 82, .	1.1	48
42	Field-induced exciton condensation in LaCoO3. Scientific Reports, 2016, 6, 30510.	1.6	42
43	Correlations in a band insulator. Physical Review B, 2009, 80, .	1.1	41
44	Self-interaction correction and contact hyperfine field. Physical Review B, 2003, 67, .	1.1	39
45	Magnetic ground state and Fermi surface of bcc Eu. Physical Review B, 2004, 70, .	1.1	39
46	Dynamical mean-field approach to materials with strong electronic correlations. European Physical Journal: Special Topics, 2009, 180, 5-28.	1.2	38
47	Crystal field and magnetism of Pr³⁺and Nd³⁺ions in orthorhombic perovskites. Journal of Physics Condensed Matter, 2013, 25, 446001.	0.7	36
48	On the possibility of excitonic magnetism in Ir double perovskites. Physical Review B, 2016, 93, .	1.1	35
49	Buried antiferromagnetic films investigated by x-ray magneto-optical reflection spectroscopy. Physical Review B, 2003, 67, .	1.1	34
50	Collective Modes in Excitonic Magnets: Dynamical Mean-Field Study. Physical Review Letters, 2019, 122, 127601.	2.9	34
51	X-ray magnetic circular dichroism studies of5fmagnetism in UCoAl and UPtAl. Physical Review B, 2002, 66, .	1.1	33
52	Frustration in the coupled rattler systemKOs2O6. Physical Review B, 2006, 74, .	1.1	33
53	Charge Fluctuations and the Valence Transition in Yb under Pressure. Physical Review Letters, 2009, 102, 246401.	2.9	32
54	Phase diagram of exciton condensate in doped two-band Hubbard model. Physical Review B, 2014, 90, .	1.1	31

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55	LDA+DMFT approach to core-level spectroscopy: Application to <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mn>3</mml:mn><mml:mi>d</mml:mi><mml:mrow></mml:mrow></mml:mrow></mml:math> transition metal compounds. Physical Review B, 2017, 96, .	1.1	30
56	Density-functional calculation of the Coulomb repulsion and correlation strength in superconducting LaFeAsO. JETP Letters, 2008, 88, 729-733.	0.4	29
57	Doping Induced Spin State Transition in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi>LaCoO</mml:mi><mml:mn>3</mml:mn></mml:msub></mml:math>: Dynamical Mean-Field Study. Physical Review Letters, 2013, 110, 267204.	2.9	27
58	Chemical pressure effect on the optical conductivity of the nodal-line semimetals <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>ZrSi</mml:mi><mml:mi>Y</mml:mi></mml:mrow><mml:m width="4pt" /><mml:mo>(</mml:mo><mml:mrow><mml:mi>Y</mml:mi><mml:mo>=</mml:mo><mml:mrow><mml:mi) Tj ETQq0 0 0 rgBT /Overlock	1.1	27
59	and <mml:math xmlns:mml="http://www.w3.org/19. Physical Review B, 2019, 99, . Electronic structure ofCrO2as deduced from its magneto-optical Kerr spectra. Physical Review B, 2002, 65, .	1.1	26
60	Force calculation for orbital-dependent potentials with FP-(L)APW+lo basis sets. Computer Physics Communications, 2008, 179, 784-790.	3.0	25
61	Quantification of Correlations in Quantum Many-Particle Systems. Physical Review Letters, 2012, 108, 087004.	2.9	25
62	<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>LDA</mml:mi><mml:mo>+</mml:mo><mml:mi>DMFT</mml:mi></mml:mrow></mml:math> to resonant inelastic x-ray scattering in correlated materials. Physical Review B, 2020, 101, .	1.1	25
63	<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mn>1</mml:mn><mml:mi>s</mml:mi></mml:mrow></mml:math> <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mn>2</mml:mn><mml:mi>p</mml:mi></mml:mrow></mml:math> spectra:<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>LDA</mml:mi><mml:mo>+</mml:mo><mml:mi>DMFT</mml:mi></mml:math>	1.1	24
64	Core-Level X-Ray Spectroscopy of Infinite-Layer Nickelate: <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi>LDA</mml:mi><mml:mo>+</mml:mo><mml:mi>DMFT</mml:mi></mml:mrow></mml:math> Study. Physical Review X, 2021, 11, .	2.8	24
65	Low-temperature properties of single-crystalCrB2. Physical Review B, 2014, 90, .	1.1	23
66	Crystal field of rare earth impurities in LaF3. Optical Materials, 2014, 37, 414-418.	1.7	23
67	Continuum Charge Excitations in High-Valence Transition-Metal Oxides Revealed by Resonant Inelastic X-Ray Scattering. Physical Review Letters, 2018, 121, 126403.	2.9	22
68	LDA+DMFT approach to ordering phenomena and the structural stability of correlated materials. European Physical Journal: Special Topics, 2017, 226, 2641-2675.	1.2	20
69	Dipole matrix element approach versus Peierls approximation for optical conductivity. Physical Review B, 2012, 85, .	1.1	18
70	DFT+DMFT study on soft moment magnetism and covalent bonding in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>SrRu</mml:mi><mml:mn>2</mml:mn></mml:m mathvariant="normal">O</mml:mi><mml:mn>6</mml:mn></mml:msub></mml:mrow></mml:math>. Physical Review B, 2017, 96, .	1.1	18
71	Electronic structure and magnetism in UPtAl. Physical Review B, 2001, 64, .	1.1	16
72	: Superconducting rattler. Physica B: Condensed Matter, 2006, 378-380, 898-899.	1.3	16

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73	Correlation effects in the triangular lattice single-band system<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mi mathvariant="normal">Li</mml:mi><mml:mi>x</mml:mi></mml:msub><mml:mi mathvariant="normal">Nb</mml:mi><mml:msub><mml:mi mathvariant="normal">O</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:mrow></mml:math>. Physical Review B, 2007, 76, .	1.1	16
74	Excitonic magnetism in d6 perovskites. Physical Review B, 2017, 95, .	1.1	16
75	Excitonic dispersion of the intermediate spin state in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>LaCoO</mml:mi><mml:mn>3</mml:mn></mml:msub></mml:math> revealed by resonant inelastic x-ray scattering. Physical Review B, 2018, 98, .	1.1	16
76	Sparse sampling and tensor network representation of two-particle Green's functions. SciPost Physics, 2020, 8, .	1.5	15
77	Full-potential linearized augmented-plane-wave calculation of the magneto-optical Kerr effect in Fe, Co and Ni. Journal of Physics Condensed Matter, 1999, 11, 6301-6309.	0.7	14
78	Exact many-body sum rule for the magneto-optical spectrum of solids. Physical Review B, 2000, 61, 15774-15777.	1.1	14
79	Theory of orbital moment collapse under pressure inFeI2. Physical Review B, 2003, 68, .	1.1	14
80	Exchange coupling in Eu compounds. Physica B: Condensed Matter, 2005, 359-361, 205-207.	1.3	14
81	Huge magnetocrystalline anisotropy of x-ray linear dichroism observed onCoâ•FeMnbilayers. Physical Review B, 2007, 75, .	1.1	14
82	woptic: Optical conductivity with Wannier functions and adaptive k-mesh refinement. Computer Physics Communications, 2016, 202, 1-11.	3.0	14
83	Understanding the XMLD and its magnetocrystalline anisotropy at the L2,3-edges of 3d transition metals. Journal of Magnetism and Magnetic Materials, 2004, 272-276, 2146-2147.	1.0	13
84	Spontaneous Spin Textures in Multiorbital Mott Systems. Physical Review Letters, 2016, 116, 256403.	2.9	12
85	Calculated <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>g</mml:mi></mml:math> -factors of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mn>5</mml:mn><mml:mi>d</mml:mi></mml:mrow></mml:math> double perovskites <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>Ba</mml:mi><mml:mn>2</mml:mn></mml:math>	1.1	12
86	Experimental and theoretical investigation of optical properties of dysprosium monopnictides. Physical Review B, 2003, 68, .	1.1	11
87	Magnetic state and electronic structure of plutonium from â€œfirst principlesâ€•calculations. Journal of Alloys and Compounds, 2007, 444-445, 42-49.	2.8	11
88	de Haasâ€“van Alphen effect and Fermi surface properties of single-crystal CrB<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>2</mml:mn></mml:msub></mml:math>. Physical Review B, 2013, 88, .	1.1	11
89	Effective Hamiltonian for potassium dynamics in theÎ²-pyrochlore superconductor KOs2O6. Physica Status Solidi (A) Applications and Materials Science, 2006, 203, 2962-2967.	0.8	10
90	Numerical calculation of spectral functions of the Bose-Hubbard model using bosonic dynamical mean-field theory. Physical Review B, 2015, 92, .	1.1	10

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91	Competing phases in a model of Pr-based cobaltites. Physical Review B, 2017, 96, .	1.1	10
92	Excitonic magnet in external field: Complex order parameter and spin currents. Physical Review B, 2018, 97, .	1.1	10
93	X-ray spectroscopy of the rare-earth nickelate LuNiO3 : LDA+DMFT study. Physical Review B, 2020, 102, .	1.1	10
94	Origin of strong coupling in lithium under pressure. Physica C: Superconductivity and Its Applications, 2007, 460-462, 133-136.	0.6	9
95	Improved Greenâ€™s function measurement for hybridization expansion quantum Monte Carlo. Computer Physics Communications, 2013, 184, 2119-2126.	3.0	9
96	Breaking of SU(4) symmetry and interplay between strongly correlated phases in the Hubbard model. Physical Review B, 2017, 95, .	1.1	9
97	Control of antiferromagnetic spin axis orientation in bilayer Fe/CuMnAs films. Scientific Reports, 2017, 7, 11147.	1.6	9
98	Electronic structure of magnetite. Physica B: Condensed Matter, 2002, 312-313, 785-786.	1.3	8
99	Optical spectroscopy and electronic band structure of ferromagneticEuB6. Physical Review B, 2008, 78, .	1.1	8
100	Doping-dependent bandwidth renormalization and spinâ€“orbit coupling in (Sr_{1â^’x}La_x)₂RhO₄. Journal of Physics Condensed Matter, 2015, 27, 085602.	0.7	8
101	Dynamical response and competing orders in two-band Hubbard model. Physical Review B, 2020, 102, .	1.1	8
102	Damping of spinful excitons in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>LaCoO</mml:mi><mml:mn>3</mml:mn></mml:msub></r by thermal fluctuations: Theory and experiment. Physical Review B, 2020, 101, .	1.1	7
103	Analysis of the crystal electric field parameters of YbNi4P2. New Journal of Physics, 2018, 20, 073021.	1.2	6
104	Pressure-Induced Excitations in the Out-of-Plane Optical Response of the Nodal-Line Semimetal ZrSiS. Physical Review Letters, 2021, 127, 076402.	2.9	6
105	Soft X-ray magnetic dichroism and Faraday rotation measured with linearly polarised light. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2001, 467-468, 1407-1410.	0.7	5
106	X-ray Faraday effect of ferromagnetic films: contribution of the core exchange splitting. Journal of Magnetism and Magnetic Materials, 2002, 240, 454-456.	1.0	5
107	Various scenarios of metalâ€insulator transition in strongly correlated materials. Annalen Der Physik, 2011, 523, 682-688.	0.9	5
108	Theoretical investigation of excitonic magnetism in LaSrCoO4. Journal of Physics Condensed Matter, 2018, 30, 135603.	0.7	5

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109	Antiferromagnetic magnons and local anisotropy: Dynamical mean-field study. Physical Review B, 2021, 104, .	1.1	5
110	<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mi>CaCu</mml:mi></mml:mrow><mml:mrow><mml:mn>3</mml:mn></ mathvariant="normal">O</mml:mi></mml:mrow><mml:mrow><mml:mn>12</mml:mn></mml:mrow></mml:msub></mml:mrow></mm : A High-Kondo-Temperature Transition-Metal Oxide. Physical Review X, 2022, 12, .	2.8	5
111	Mott versus Slater-Type Metal-Insulator Transition in Sr₂IrO₄ and Ba₂IrO₄. , 2014, , .		4
112	Ferromagnetism of LaCoO$_3$ films. SciPost Physics, 2020, 8, .	1.5	4
113	Valence skipping, internal doping, and site-selective Mott transition in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>PbCoO</mml:mi><mml:mn>3</mml:mn></mml:msub></ under pressure. Physical Review B, 2021, 104, .	1.1	4
114	Suppression and revival of long-range ferromagnetic order in the multiorbital Fermi-Hubbard model. Physical Review B, 2018, 97, .	1.1	3
115	Pressure-induced spin-state ordering in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>Sr</mml:mi><mml:mn>2</mml:mn></ mathvariant="normal">F</mml:mi></mml:mrow></mml:math>. Physical Review B, 2019, 99, .	1.1	3
116	Magneto-optical effects of Rh3+ and Rh4+ doped yttrium iron garnet. Journal of Applied Physics, 1999, 85, 5986-5988.	1.1	2
117	de Haas-van Alphen effect and the Fermi surface of PrNi5. European Physical Journal B, 2000, 18, 595-600.	0.6	2
118	Material-Specific Investigations of Correlated Electron Systems. , 2010, , 599-612.		0