

Jan Kunes

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115
papers

6,108
citations

40
h-index

76
g-index

123
ext. papers

6,883
ext. citations

5.1
avg. IF

5.8
L-index

| # | Paper | IF | Citations |
|-----|---|------|-----------|
| 115 | Electrical switching of an antiferromagnet. <i>Science</i> , 2016 , 351, 587-90 | 33.3 | 707 |
| 114 | Room-temperature antiferromagnetic memory resistor. <i>Nature Materials</i> , 2014 , 13, 367-74 | 27 | 435 |
| 113 | Quantum spin Hall effect in a transition metal oxide Na ₂ IrO ₃ . <i>Physical Review Letters</i> , 2009 , 102, 256403 | 7.4 | 399 |
| 112 | Wien2wannier: From linearized augmented plane waves to maximally localized Wannier functions. <i>Computer Physics Communications</i> , 2010 , 181, 1888-1895 | 4.2 | 312 |
| 111 | Detection of magnetic circular dichroism using a transmission electron microscope. <i>Nature</i> , 2006 , 441, 486-8 | 50.4 | 293 |
| 110 | Electronic structure of fcc Th: Spin-orbit calculation with 6p _{1/2} local orbital extension. <i>Physical Review B</i> , 2001 , 64, | 3.3 | 215 |
| 109 | Ab initio studies on the interplay between spin-orbit interaction and Coulomb correlation in Sr ₂ IrO ₄ and Ba ₂ IrO ₄ . <i>Physical Review Letters</i> , 2012 , 108, 086403 | 7.4 | 202 |
| 108 | Magnetic, magneto-optical, and structural properties of URhAl from first-principles calculations. <i>Physical Review B</i> , 2001 , 63, | 3.3 | 153 |
| 107 | Exact exchange for correlated electrons. <i>Physica Status Solidi (B): Basic Research</i> , 2006 , 243, 563-572 | 1.3 | 147 |
| 106 | Collapse of magnetic moment drives the Mott transition in MnO. <i>Nature Materials</i> , 2008 , 7, 198-202 | 27 | 145 |
| 105 | Phase diagram and gap anisotropy in iron-pnictide superconductors. <i>Physical Review B</i> , 2010 , 81, | 3.3 | 137 |
| 104 | Charge disproportionation and spin ordering tendencies in Na _x CoO ₂ . <i>Physical Review B</i> , 2004 , 70, | 3.3 | 127 |
| 103 | NiO: correlated band structure of a charge-transfer insulator. <i>Physical Review Letters</i> , 2007 , 99, 156404 | 7.4 | 122 |
| 102 | Oxygen x-ray emission and absorption spectra as a probe of the electronic structure of strongly correlated oxides. <i>Physical Review B</i> , 2008 , 77, | 3.3 | 121 |
| 101 | Correlation effects and structural dynamics in the pyrochlore superconductor KOs ₂ O ₆ . <i>Physical Review B</i> , 2004 , 70, | 3.3 | 99 |
| 100 | First-principles investigation of the damping of fast magnetization precession in ferromagnetic 3d metals. <i>Physical Review B</i> , 2002 , 65, | 3.3 | 97 |
| 99 | Coulomb repulsion and correlation strength in LaFeAsO from density functional and dynamical mean-field theories. <i>Journal of Physics Condensed Matter</i> , 2009 , 21, 075602 | 1.8 | 87 |

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| 98 | Local correlations and hole doping in NiO: A dynamical mean-field study. <i>Physical Review B</i> , 2007 , 75, | 3.3 | 86 |
| 97 | Superconductivity and lattice instability in compressed lithium from Fermi surface hot spots. <i>Physical Review Letters</i> , 2006 , 96, 047004 | 7.4 | 82 |
| 96 | Spin state transition and covalent bonding in LaCoO ₃ . <i>Physical Review B</i> , 2012 , 86, | 3.3 | 78 |
| 95 | Disproportionation and metallization at low-spin to high-spin transition in multiorbital Mott systems. <i>Physical Review Letters</i> , 2011 , 106, 256401 | 7.4 | 69 |
| 94 | Exchange Coupling in Eu Monochalcogenides from First Principles. <i>Journal of the Physical Society of Japan</i> , 2005 , 74, 1408-1411 | 1.5 | 64 |
| 93 | Efficient treatment of two-particle vertices in dynamical mean-field theory. <i>Physical Review B</i> , 2011 , 83, | 3.3 | 63 |
| 92 | Optical determination of the Néel vector in a CuMnAs thin-film antiferromagnet. <i>Nature Photonics</i> , 2017 , 11, 91-96 | 33.9 | 62 |
| 91 | Excitonic condensation in systems of strongly correlated electrons. <i>Journal of Physics Condensed Matter</i> , 2015 , 27, 333201 | 1.8 | 61 |
| 90 | Anisotropic x-ray magnetic linear dichroism at the L _{2,3} edges of cubic Fe, Co, and Ni: Ab initio calculations and model theory. <i>Physical Review B</i> , 2003 , 67, | 3.3 | 59 |
| 89 | Pressure-driven metal-insulator transition in hematite from dynamical mean-field theory. <i>Physical Review Letters</i> , 2009 , 102, 146402 | 7.4 | 58 |
| 88 | Mott transition of MnO under pressure: A comparison of correlated band theories. <i>Physical Review B</i> , 2006 , 74, | 3.3 | 54 |
| 87 | Disproportionation, metal-insulator transition, and critical interaction strength in Na(1/2)CoO ₂ . <i>Physical Review Letters</i> , 2005 , 94, 026403 | 7.4 | 49 |
| 86 | Atomically resolved spectroscopic study of Sr ₂ IrO ₄ : experiment and theory. <i>Scientific Reports</i> , 2013 , 3, 3073 | 4.9 | 48 |
| 85 | Crystal field parameters with Wannier functions: Application to rare-earth aluminates. <i>Physical Review B</i> , 2013 , 87, | 3.3 | 48 |
| 84 | Excitonic condensation of strongly correlated electrons: The case of Pr _{0.5} Ca _{0.5} CoO ₃ . <i>Physical Review B</i> , 2014 , 90, | 3.3 | 47 |
| 83 | Doping dependence of spin fluctuations and electron correlations in iron pnictides. <i>Physical Review B</i> , 2010 , 82, | 3.3 | 46 |
| 82 | Temperature-dependent correlations in covalent insulators: Dynamical mean-field approximation. <i>Physical Review B</i> , 2008 , 78, | 3.3 | 46 |
| 81 | Spin state of negative charge-transfer material SrCoO(3). <i>Physical Review Letters</i> , 2012 , 109, 117206 | 7.4 | 44 |

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| 80 | Metal-insulator transition in NiS ₂ Se. <i>Physical Review B</i> , 2010 , 81, | 3-3 | 44 |
| 79 | Kondo and anti-Kondo coupling to local moments in EuB ₆ . <i>Physical Review B</i> , 2004 , 69, | 3-3 | 44 |
| 78 | Observation of the x-ray magneto-optical Voigt effect. <i>Physical Review Letters</i> , 2001 , 87, 047401 | 7-4 | 44 |
| 77 | Excitonic instability at the spin-state transition in the two-band Hubbard model. <i>Physical Review B</i> , 2014 , 89, | 3-3 | 43 |
| 76 | X-ray Faraday effect at the L _{2,3} edges of Fe, Co, and Ni: Theory and experiment. <i>Physical Review B</i> , 2001 , 64, | 3-3 | 42 |
| 75 | Self-interaction correction and contact hyperfine field. <i>Physical Review B</i> , 2003 , 67, | 3-3 | 38 |
| 74 | Correlations in a band insulator. <i>Physical Review B</i> , 2009 , 80, | 3-3 | 36 |
| 73 | Magnetic ground state and Fermi surface of bcc Eu. <i>Physical Review B</i> , 2004 , 70, | 3-3 | 36 |
| 72 | Field-induced exciton condensation in LaCoO ₃ . <i>Scientific Reports</i> , 2016 , 6, 30510 | 4-9 | 32 |
| 71 | Dynamical mean-field approach to materials with strong electronic correlations. <i>European Physical Journal: Special Topics</i> , 2009 , 180, 5-28 | 2-3 | 32 |
| 70 | Frustration in the coupled rattler system KOs ₂ O ₆ . <i>Physical Review B</i> , 2006 , 74, | 3-3 | 32 |
| 69 | Crystal field and magnetism of Pr ³⁺ and Nd ³⁺ ions in orthorhombic perovskites. <i>Journal of Physics Condensed Matter</i> , 2013 , 25, 446001 | 1-8 | 31 |
| 68 | X-ray magnetic circular dichroism studies of 5f magnetism in UCoAl and UPtAl. <i>Physical Review B</i> , 2002 , 66, | 3-3 | 31 |
| 67 | On the possibility of excitonic magnetism in Ir double perovskites. <i>Physical Review B</i> , 2016 , 93, | 3-3 | 28 |
| 66 | Phase diagram of exciton condensate in doped two-band Hubbard model. <i>Physical Review B</i> , 2014 , 90, | 3-3 | 27 |
| 65 | Density-functional calculation of the Coulomb repulsion and correlation strength in superconducting LaFeAsO. <i>JETP Letters</i> , 2008 , 88, 729-733 | 1-2 | 27 |
| 64 | Buried antiferromagnetic films investigated by x-ray magneto-optical reflection spectroscopy. <i>Physical Review B</i> , 2003 , 67, | 3-3 | 26 |
| 63 | Electronic structure of CrO ₂ as deduced from its magneto-optical Kerr spectra. <i>Physical Review B</i> , 2002 , 65, | 3-3 | 26 |

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| 62 | Charge fluctuations and the valence transition in Yb under pressure. <i>Physical Review Letters</i> , 2009 , 102, 246401 | 7.4 | 25 |
| 61 | Collective Modes in Excitonic Magnets: Dynamical Mean-Field Study. <i>Physical Review Letters</i> , 2019 , 122, 127601 | 7.4 | 24 |
| 60 | Force calculation for orbital-dependent potentials with FP-(L)APW + lo basis sets. <i>Computer Physics Communications</i> , 2008 , 179, 784-790 | 4.2 | 24 |
| 59 | Quantification of correlations in quantum many-particle systems. <i>Physical Review Letters</i> , 2012 , 108, 087004 | 7.4 | 23 |
| 58 | Crystal field of rare earth impurities in LaF ₃ . <i>Optical Materials</i> , 2014 , 37, 414-418 | 3.3 | 22 |
| 57 | Doping induced spin state transition in LaCoO ₃ : dynamical mean-field study. <i>Physical Review Letters</i> , 2013 , 110, 267204 | 7.4 | 21 |
| 56 | LDA+DMFT approach to core-level spectroscopy: Application to 3d transition metal compounds. <i>Physical Review B</i> , 2017 , 96, | 3.3 | 17 |
| 55 | Chemical pressure effect on the optical conductivity of the nodal-line semimetals ZrSiY (Y=S,Se,Te) and ZrGeY (Y=S,Te). <i>Physical Review B</i> , 2019 , 99, | 3.3 | 16 |
| 54 | Low-temperature properties of single-crystal CrB ₂ . <i>Physical Review B</i> , 2014 , 90, | 3.3 | 16 |
| 53 | KOs ₂ O ₆ : Superconducting rattler. <i>Physica B: Condensed Matter</i> , 2006 , 378-380, 898-899 | 2.8 | 16 |
| 52 | Excitonic magnetism in d ₆ perovskites. <i>Physical Review B</i> , 2017 , 95, | 3.3 | 15 |
| 51 | LDA+DMFT approach to ordering phenomena and the structural stability of correlated materials. <i>European Physical Journal: Special Topics</i> , 2017 , 226, 2641-2675 | 2.3 | 15 |
| 50 | Antiferromagnetism in RuO ₂ as d-wave Pomeranchuk instability. <i>Physical Review B</i> , 2019 , 99, | 3.3 | 14 |
| 49 | Dipole matrix element approach versus Peierls approximation for optical conductivity. <i>Physical Review B</i> , 2012 , 85, | 3.3 | 14 |
| 48 | Exchange coupling in Eu compounds. <i>Physica B: Condensed Matter</i> , 2005 , 359-361, 205-207 | 2.8 | 14 |
| 47 | Electronic structure and magnetism in UPtAl. <i>Physical Review B</i> , 2001 , 64, | 3.3 | 14 |
| 46 | Excitonic dispersion of the intermediate spin state in LaCoO ₃ revealed by resonant inelastic x-ray scattering. <i>Physical Review B</i> , 2018 , 98, | 3.3 | 13 |
| 45 | Theory of orbital moment collapse under pressure in FeI ₂ . <i>Physical Review B</i> , 2003 , 68, | 3.3 | 13 |

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| 44 | Full-potential linearized augmented-plane-wave calculation of the magneto-optical Kerr effect in Fe, Co and Ni. <i>Journal of Physics Condensed Matter</i> , 1999 , 11, 6301-6309 | 1.8 | 13 |
| 43 | DFT+DMFT study on soft moment magnetism and covalent bonding in SrRu2O6. <i>Physical Review B</i> , 2017 , 96, | 3.3 | 12 |
| 42 | Huge magnetocrystalline anisotropy of x-ray linear dichroism observed on CoFeMn bilayers. <i>Physical Review B</i> , 2007 , 75, | 3.3 | 12 |
| 41 | Understanding the XMLD and its magnetocrystalline anisotropy at the L2,3-edges of 3d transition metals. <i>Journal of Magnetism and Magnetic Materials</i> , 2004 , 272-276, 2146-2147 | 2.8 | 12 |
| 40 | Spontaneous Spin Textures in Multiorbital Mott Systems. <i>Physical Review Letters</i> , 2016 , 116, 256403 | 7.4 | 11 |
| 39 | Correlation effects in the triangular lattice single-band system Li _x NbO ₂ . <i>Physical Review B</i> , 2007 , 76, | 3.3 | 11 |
| 38 | Magnetic state and electronic structure of plutonium from first principles calculations. <i>Journal of Alloys and Compounds</i> , 2007 , 444-445, 42-49 | 5.7 | 11 |
| 37 | Exact many-body sum rule for the magneto-optical spectrum of solids. <i>Physical Review B</i> , 2000 , 61, 15774-15777 | 3.3 | 11 |
| 36 | woptic: Optical conductivity with Wannier functions and adaptive k-mesh refinement. <i>Computer Physics Communications</i> , 2016 , 202, 1-11 | 4.2 | 10 |
| 35 | Effective Hamiltonian for potassium dynamics in the pyrochlore superconductor KOs ₂ O ₆ . <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2006 , 203, 2962-2967 | 1.6 | 10 |
| 34 | Continuum Charge Excitations in High-Valence Transition-Metal Oxides Revealed by Resonant Inelastic X-Ray Scattering. <i>Physical Review Letters</i> , 2018 , 121, 126403 | 7.4 | 10 |
| 33 | LDA+DMFT approach to resonant inelastic x-ray scattering in correlated materials. <i>Physical Review B</i> , 2020 , 101, | 3.3 | 9 |
| 32 | Improved Green's function measurement for hybridization expansion quantum Monte Carlo. <i>Computer Physics Communications</i> , 2013 , 184, 2119-2126 | 4.2 | 9 |
| 31 | Calculated g-factors of 5d double perovskites Ba ₂ NaOsO ₆ and Ba ₂ YO ₆ . <i>Physical Review B</i> , 2017 , 95, | 3.3 | 9 |
| 30 | Origin of strong coupling in lithium under pressure. <i>Physica C: Superconductivity and Its Applications</i> , 2007 , 460-462, 133-136 | 1.3 | 9 |
| 29 | Experimental and theoretical investigation of optical properties of dysprosium mononictides. <i>Physical Review B</i> , 2003 , 68, | 3.3 | 9 |
| 28 | Numerical calculation of spectral functions of the Bose-Hubbard model using bosonic dynamical mean-field theory. <i>Physical Review B</i> , 2015 , 92, | 3.3 | 8 |
| 27 | de Haas-van Alphen effect and Fermi surface properties of single-crystal CrB ₂ . <i>Physical Review B</i> , 2013 , 88, | 3.3 | 8 |

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| 26 | Control of antiferromagnetic spin axis orientation in bilayer Fe/CuMnAs films. <i>Scientific Reports</i> , 2017 , 7, 11147 | 4.9 | 8 |
| 25 | Charge-transfer effect in hard x-ray 1s and 2p photoemission spectra: LDA+DMFT and cluster-model analysis. <i>Physical Review B</i> , 2019 , 100, | 3.3 | 7 |
| 24 | Excitonic magnet in external field: Complex order parameter and spin currents. <i>Physical Review B</i> , 2018 , 97, | 3.3 | 7 |
| 23 | Competing phases in a model of Pr-based cobaltites. <i>Physical Review B</i> , 2017 , 96, | 3.3 | 7 |
| 22 | Electronic structure of magnetite. <i>Physica B: Condensed Matter</i> , 2002 , 312-313, 785-786 | 2.8 | 7 |
| 21 | Doping-dependent bandwidth renormalization and spin-orbit coupling in (Sr _{1-x} La _x) ₂ RhO ₄ . <i>Journal of Physics Condensed Matter</i> , 2015 , 27, 085602 | 1.8 | 6 |
| 20 | Optical spectroscopy and electronic band structure of ferromagnetic EuB ₆ . <i>Physical Review B</i> , 2008 , 78, | 3.3 | 6 |
| 19 | Core-Level X-Ray Spectroscopy of Infinite-Layer Nickelate: LDA+DMFT Study. <i>Physical Review X</i> , 2021 , 11, | 9.1 | 6 |
| 18 | Breaking of SU(4) symmetry and interplay between strongly correlated phases in the Hubbard model. <i>Physical Review B</i> , 2017 , 95, | 3.3 | 5 |
| 17 | Theoretical investigation of excitonic magnetism in LaSrCoO. <i>Journal of Physics Condensed Matter</i> , 2018 , 30, 135603 | 1.8 | 5 |
| 16 | X-ray Faraday effect of ferromagnetic films: contribution of the core exchange splitting. <i>Journal of Magnetism and Magnetic Materials</i> , 2002 , 240, 454-456 | 2.8 | 5 |
| 15 | Soft X-ray magnetic dichroism and Faraday rotation measured with linearly polarised light. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2001 , 467-468, 1407-1410 | 1.2 | 5 |
| 14 | Sparse sampling and tensor network representation of two-particle Green's functions. <i>SciPost Physics</i> , 2020 , 8, | 6.1 | 5 |
| 13 | Mott versus Slater-Type Metal-Insulator Transition in Sr ₂ IrO ₄ and Ba ₂ IrO ₄ 2014 , | | 4 |
| 12 | Various scenarios of metal-insulator transition in strongly correlated materials. <i>Annalen Der Physik</i> , 2011 , 523, 682-688 | 2.6 | 4 |
| 11 | Analysis of the crystal electric field parameters of YbNi ₄ P ₂ . <i>New Journal of Physics</i> , 2018 , 20, 073021 | 2.9 | 4 |
| 10 | Dynamical response and competing orders in two-band Hubbard model. <i>Physical Review B</i> , 2020 , 102, | 3.3 | 3 |
| 9 | Pressure-induced spin-state ordering in Sr ₂ CoO ₃ F. <i>Physical Review B</i> , 2019 , 99, | 3.3 | 2 |

- 8 Damping of spinful excitons in LaCoO₃ by thermal fluctuations: Theory and experiment. *Physical Review B*, **2020**, 101, 3:3 2
- 7 de Haas-van Alphen effect and the Fermi surface of PrNi₅. *European Physical Journal B*, **2000**, 18, 595-600.2 2
- 6 Magneto-optical effects of Rh³⁺ and Rh⁴⁺ doped yttrium iron garnet. *Journal of Applied Physics*, **1999**, 85, 5986-5988 2.5 2
- 5 Ferromagnetism of LaCoO₃ films. *SciPost Physics*, **2020**, 8, 6:1 2
- 4 X-ray spectroscopy of the rare-earth nickelate LuNiO₃: LDA+DMFT study. *Physical Review B*, **2020**, 102, 3:3 1
- 3 Pressure-Induced Excitations in the Out-of-Plane Optical Response of the Nodal-Line Semimetal ZrSiS. *Physical Review Letters*, **2021**, 127, 076402 7:4 1
- 2 Material-Specific Investigations of Correlated Electron Systems **2010**, 599-612
- 1 Disproportionation and Spin Ordering Tendencies in Na_xCoO₂ AT $x = 1/3$ **2005**, 235-242