

Peter Horsch

List of Publications by Year in descending order

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136
papers

5,343
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71097

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all docs

138
docs citations

138
times ranked

1969
citing authors

| # | ARTICLE | IF | CITATIONS |
|----|--|-----|-----------|
| 1 | Spin polarons in the t-J model. Physical Review B, 1991, 44, 317-331. | 3.2 | 447 |
| 2 | Precise quasiparticle energies and Hartree-Fock bands of semiconductors and insulators. Physical Review B, 1988, 37, 8351-8362. | 3.2 | 213 |
| 3 | Close Relation between Localized-Electron Magnetism and the Paramagnetic Wave Function of Completely Itinerant Electrons. Physical Review Letters, 1982, 49, 889-892. | 7.8 | 206 |
| 4 | Single-particle excitations in a quantum antiferromagnet. Physical Review B, 1990, 41, 2017-2029. | 3.2 | 199 |
| 5 | Fermi surface and dynamics of the t-J model at moderate doping. Physical Review Letters, 1991, 66, 2258-2261. | 7.8 | 178 |
| 6 | Spin Order due to Orbital Fluctuations: Cubic Vanadates. Physical Review Letters, 2001, 86, 3879-3882. | 7.8 | 164 |
| 7 | Correlation effects on bond alternation in polyacetylene. Physical Review B, 1981, 24, 7351-7360. | 3.2 | 157 |
| 8 | Fingerprints of spin-orbital physics in cubic Mott insulators: Magnetic exchange interactions and optical spectral weights. Physical Review B, 2005, 72, . | 3.2 | 153 |
| 9 | Optical properties of one- and two-dimensional Hubbard and t-J models. Physical Review B, 1990, 42, 8736-8739. | 3.2 | 128 |
| 10 | Spin-correlations and low lying excited states of the spin-1/2 Heisenberg antiferromagnet on a square lattice. Zeitschrift für Physik B-Condensed Matter, 1988, 72, 181-193. | 1.1 | 118 |
| 11 | Orbital dynamics in ferromagnetic transition-metal oxides. Physical Review B, 1999, 59, 6795-6805. | 3.2 | 117 |
| 12 | A new view of the electronic structure of the spin-Peierls compound NaVO_2 . European Physical Journal B, 1998, 5, 367-370. | 1.5 | 92 |
| 13 | Helicoidal magnetic order in the spin-chain compound NaCu_2O_2 . Physical Review B, 2005, 71, . | 3.2 | 91 |
| 14 | Spin-Orbital Entanglement and Violation of the Goodenough-Kanamori Rules. Physical Review Letters, 2006, 96, 147205. | 7.8 | 89 |
| 15 | Dimerization versus Orbital-Moment Ordering in a Mott Insulator YVO_3 . Physical Review Letters, 2003, 91, 257203. | 7.8 | 88 |
| 16 | Electronic excitations in semiconductors. II. Application of the theory to diamond. Physical Review B, 1984, 29, 1870-1881. | 3.2 | 79 |
| 17 | Missing Bond-Charge Repulsion. Physical Review Letters, 1988, 60, 70-70. | 7.8 | 74 |
| 18 | Critical Behavior of the $S=3/2$ Antiferromagnetic Heisenberg Chain. Physical Review Letters, 1996, 76, 4955-4958. | 7.8 | 74 |

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|----|--|-----|-----------|
| 19 | Optical conductivity of colossal-magnetoresistance compounds: Role of orbital degeneracy in the ferromagnetic phase. Physical Review B, 1999, 59, 6217-6228. | 3.2 | 74 |
| 20 | Evolution of Spin-Orbital-Lattice Coupling in the $R_{1-x}VO_3$ Perovskites. Physical Review Letters, 2008, 100, 167205. | 7.8 | 73 |
| 21 | Spin and Charge Dynamics of the t - J Model. Physical Review Letters, 1995, 74, 980-983. | 7.8 | 69 |
| 22 | Theory of optical spectral weights in Mott insulators with orbital degrees of freedom. Physical Review B, 2004, 70, . | 3.2 | 68 |
| 23 | Numerical renormalization-group study of the correlation functions of the antiferromagnetic spin-1/2 Heisenberg chain. Physical Review B, 1995, 52, R719-R722. | 3.2 | 63 |
| 24 | On the theory of electronic correlations in solids. Zeitschrift für Physik B Condensed Matter and Quanta, 1979, 36, 23-35. | 1.9 | 62 |
| 25 | Planar Cu and O hole densities in high-Tc cuprates determined with NMR. Physical Review B, 2004, 69, . | 3.2 | 60 |
| 26 | Absence of Hole Confinement in Transition-Metal Oxides with Orbital Degeneracy. Physical Review Letters, 2008, 100, 066403. | 7.8 | 57 |
| 27 | Doping dependence of long-range magnetic order in the t - J model. Physical Review B, 1993, 47, 463-469. | 3.2 | 56 |
| 28 | Photoemission Spectra of $LaMnO_3$ Controlled by Orbital Excitations. Physical Review Letters, 2000, 85, 5174-5177. | 7.8 | 54 |
| 29 | Renormalized pseudoparticle description of the one-dimensional Hubbard model thermodynamics. Physical Review B, 1991, 44, 9967-9980. | 3.2 | 53 |
| 30 | Effective mass of quasiparticles in the t - J model with electron-phonon interactions. Physical Review B, 1992, 46, 14305-14308. | 3.2 | 53 |
| 31 | Electronic excitations in semiconductors. General theory. Physical Review B, 1983, 28, 5977-5991. | 3.2 | 52 |
| 32 | Spin polarons in the t - J model: Shape and backflow. Physical Review B, 1993, 48, 10559-10562. | 3.2 | 51 |
| 33 | Optical Conductivity in Doped Manganites with Planar x_2y_2 Orbital Order. Physical Review Letters, 1999, 82, 3160-3163. | 7.8 | 49 |
| 34 | Attractive interactions from repulsive forces in a multiband Hubbard model. Physical Review B, 1989, 39, 2924-2927. | 3.2 | 47 |
| 35 | Quasiparticles and photoemission spectra in correlated fermion systems. Physica C: Superconductivity and Its Applications, 1989, 162-164, 783-784. | 1.2 | 47 |
| 36 | Theory of the density fluctuation spectrum of strongly correlated electrons. Physical Review B, 1996, 54, R9600-R9603. | 3.2 | 47 |

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| 37 | Thermally Activated Peierls Dimerization in Ferromagnetic Spin Chains. Physical Review Letters, 2008, 101, 157204. | 7.8 | 47 |
| 38 | Order Parameter in Quantum Antiferromagnets. Journal of the Physical Society of Japan, 1989, 58, 3894-3898. | 1.6 | 43 |
| 39 | Wigner Crystallization in $\text{Na}_3\text{Cu}_2\text{O}_4$ and $\text{Na}_8\text{Cu}_5\text{O}_{10}$ Chain Compounds. Physical Review Letters, 2005, 94, 076403. | 7.8 | 43 |
| 40 | Charge-spin recombination in the one-dimensional supersymmetric t-J model. Physical Review B, 1992, 46, 14624-14654. | 3.2 | 42 |
| 41 | Compass-Heisenberg model on the square lattice – Spin order and elementary excitations. Europhysics Letters, 2010, 91, 40005. | 2.0 | 41 |
| 42 | Static properties of one-dimensional generalized Landau liquids. Physical Review B, 1992, 45, 7899-7917. | 3.2 | 40 |
| 43 | Spectral properties of orbital polarons in Mott insulators. Physical Review B, 2008, 78, . | 3.2 | 40 |
| 44 | Ground state of the one-dimensional antiferromagnetic Heisenberg model. Physical Review B, 1985, 31, 1590-1599. | 3.2 | 39 |
| 45 | Superconducting pairing of spin polarons in the t-J model. Physical Review B, 1997, 55, R11997-R12000. | 3.2 | 38 |
| 46 | Spatial structure of spin polarons in the t -J model. Physical Review B, 1998, 57, 4308-4320. | 3.2 | 38 |
| 47 | Two-particle spectral properties of generalized Landau liquids. Physical Review Letters, 1992, 68, 871-874. | 7.8 | 37 |
| 48 | Generalizing the t-J model: Triplet holes. Physical Review B, 1992, 46, 5798-5801. | 3.2 | 35 |
| 49 | Orbitally induced string formation in the spin-orbital polarons. Physical Review B, 2009, 79, . | 3.2 | 35 |
| 50 | Effects of spin vacancies on magnetic properties of the Kitaev-Heisenberg model. Physical Review B, 2011, 84, . | 3.2 | 35 |
| 51 | One-dimensional orbital fluctuations and the exotic magnetic properties of YVO_3 . Physical Review B, 2007, 75, . | 3.2 | 34 |
| 52 | SINGLE-PARTICLE AND OPTICAL EXCITATIONS IN DOPED MOTT- HUBBARD INSULATORS. International Journal of Modern Physics B, 1992, 06, 589-602. | 2.0 | 33 |
| 53 | von Neumann entropy spectra and entangled excitations in spin-orbital models. Physical Review B, 2012, 86, . | 3.2 | 33 |
| 54 | Magnetic properties of nanoscale compass-Heisenberg planar clusters. Physical Review B, 2012, 86, . | 3.2 | 32 |

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| 55 | Spontaneous symmetry breaking in the Lieb-Mattis model of antiferromagnetism. Physical Review B, 1990, 42, 4663-4669. | 3.2 | 31 |
| 56 | Magnetic Properties of Spin-Orbital Polarons in Lightly Doped Cobaltates. Physical Review Letters, 2006, 96, 216404. | 7.8 | 31 |
| 57 | A new aspect of superconductivity in A-15 compounds. Zeitschrift für Physik B Condensed Matter and Quanta, 1977, 27, 153-160. | 1.9 | 30 |
| 58 | Two-particle fluctuations in one-dimensional generalized Landau liquids. Physical Review B, 1992, 46, 14728-14771. | 3.2 | 30 |
| 59 | Density fluctuations and phonon renormalization in the t-J model. Physica C: Superconductivity and Its Applications, 1997, 282-287, 1751-1752. | 1.2 | 29 |
| 60 | Theoretical study of the optical conductivity of NaV_2O_5 . Physical Review B, 1999, 60, R8438-R8441. | 3.2 | 28 |
| 61 | On the self-energy of electrons in metals. Solid State Communications, 1987, 62, 359-363. | 1.9 | 26 |
| 62 | Frequency-dependent conductivity of the one-dimensional Hubbard model at strong coupling. Physical Review B, 1993, 48, 10595-10598. | 3.2 | 26 |
| 63 | Magnetic effects, dynamical form factors, and electronic instabilities in the Hubbard chain. Physical Review B, 1993, 48, 4200-4203. | 3.2 | 26 |
| 64 | Temperature dependence of optical spectral weights in quarter-filled ladder systems. Physical Review B, 2002, 65, . | 3.2 | 26 |
| 65 | Self-Localization of Composite Spin-Lattice Polarons. Physical Review Letters, 2006, 96, 086402. | 7.8 | 26 |
| 66 | Quantum phase transitions in exactly solvable one-dimensional compass models. Physical Review B, 2014, 89, . | 3.2 | 26 |
| 67 | Exact treatment of magnetism-driven ferroelectricity in the one-dimensional compass model. Physical Review B, 2014, 90, . | 3.2 | 26 |
| 68 | Hidden Quasiparticles and Incoherent Photoemission Spectra in NaIrO_2 . Physical Review Letters, 2013, 111, 037205. | 7.8 | 25 |
| 69 | Dissipationless spin current between two coupled ferromagnets. Physical Review B, 2014, 89, . | 3.2 | 24 |
| 70 | Manganites at quarter filling: Role of Jahn-Teller interactions. Physical Review B, 2004, 69, . | 3.2 | 23 |
| 71 | Domain-wall excitations and optical conductivity in one-dimensional Wigner lattices. Physical Review B, 2006, 73, . | 3.2 | 23 |
| 72 | Defect states and excitations in a Mott insulator with orbital degrees of freedom: Mott-Hubbard gap versus optical and transport gaps in doped systems. Physical Review B, 2013, 87, . | 3.2 | 23 |

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| 73 | Density response of the t-J model and renormalization of breathing and half-breathing phonon modes: A slave-fermion calculation. Physica C: Superconductivity and Its Applications, 2000, 341-348, 117-120. Defect states and spin-orbital physics in doped vanadates $\text{YCa}_{1-x}\text{VO}_x$ | 1.2 | 22 |
| 74 | Hole propagation in the Kitaev-Heisenberg model: From quasiparticles in quantum N el states to non-Fermi liquid in the Kitaev phase. Physical Review B, 2014, 90, . | 3.2 | 22 |
| 75 | Doping dependence of density response and bond-stretching phonons in cuprates. Physica B: Condensed Matter, 2005, 359-361, 620-622. | 2.7 | 19 |
| 77 | Finite-size scaling in the ground state of spin-1/2 antiferromagnetic XXZ rings. Physical Review B, 1987, 35, 1877-1880. | 3.2 | 18 |
| 78 | Exciton Doublet in the Mott-Hubbard Insulator LiCuVO_4 Identified by Spectral Ellipsometry. Physical Review Letters, 2009, 103, 187401. | 7.8 | 18 |
| 79 | Self-energy corrections to the local density band structure of semiconductors and insulators. Solid State Communications, 1986, 59, 485-490. | 1.9 | 17 |
| 80 | Electron-energy loss spectra and plasmon resonance in cuprates. Physical Review B, 1999, 60, R3735-R3738. | 3.2 | 17 |
| 81 | Defects, Disorder, and Strong Electron Correlations in Orbital Degenerate, Doped Mott Insulators. Physical Review Letters, 2015, 115, 206403. | 7.8 | 17 |
| 82 | Quasiparticles and the structure of orbital polarons in ferromagnetic LaMnO_3 . Physical Review B, 2002, 65, . | 3.2 | 16 |
| 83 | Magnetic excitations in one-dimensional spin-orbital models. Physical Review B, 2011, 83, . | 3.2 | 16 |
| 84 | Double-exchange magnets: Spin dynamics in the paramagnetic phase. Physical Review B, 1999, 59, R14149-R14152. | 3.2 | 14 |
| 85 | Spin exchange dominated by charge fluctuations of the Wigner lattice in the chain cuprate $\text{Na}_5\text{Cu}_3\text{O}_6$. Physical Review B, 2011, 84, . | 3.2 | 14 |
| 86 | Fingerprints of spin-orbital polarons and of their disorder in the photoemission spectra of doped Mott insulators with orbital degeneracy. Physical Review B, 2018, 97, . | 3.2 | 14 |
| 87 | Defect-Induced Orbital Polarization and Collapse of Orbital Order in Doped Vanadium Perovskites. Physical Review Letters, 2019, 122, 127206. | 7.8 | 14 |
| 88 | Spin-orbital physics in the optical conductivity of quarter-filled manganites. Physical Review B, 2005, 72, . | 3.2 | 13 |
| 89 | A single hole in a quantum antiferromagnet: self-consistent Green's function approach. International Journal of Modern Physics B, 1991, 05, 207-217. | 2.0 | 12 |
| 90 | Comment on "Phase diagram of the one-dimensional t-J model from variational theory". Physical Review Letters, 1992, 68, 3110-3110. | 7.8 | 12 |

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| 91 | Spin-correlations of the spin-1/2 Heisenberg antiferromagnet on a square lattice. Physica C: Superconductivity and Its Applications, 1988, 153-155, 1285-1286. | 1.2 | 11 |
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| 109 | Orbital rotations induced by charges of polarons and defects in doped vanadates. Physical Review B, 2021, 103, . | 3.2 | 4 |
| 110 | Accurate selfenergy-corrections to local-density bands of semiconductors and insulators. Physica Scripta, 1988, 38, 617-622. | 2.5 | 3 |
| 111 | Application of the Landau-Luttinger Liquid Formulation to the Study of the Magnetic Properties of the 1-D Hubbard Model. International Journal of Modern Physics B, 1991, 05, 3-30. | 2.0 | 3 |
| 112 | Spin-wave theory for dimerized ferromagnetic chains. Journal of Physics: Conference Series, 2010, 200, 022017. | 0.4 | 3 |
| 113 | Exact diagonalization study of spin and charge dynamics in the t-J model. Physica C: Superconductivity and Its Applications, 1994, 235-240, 2231-2232. | 1.2 | 2 |
| 114 | Magnetic interactions and optical spectral weights in Mott insulators with orbital degrees of freedom. Physica Status Solidi (B): Basic Research, 2005, 242, 384-391. | 1.5 | 2 |
| 115 | Anisotropic optical response of the mixed-valent Mott-Hubbard insulator NaCu ₂ O ₂ . Physical Review B, 2011, 84, . | 3.2 | 2 |
| 116 | Localization of holes near charged defects in orbitally degenerate, doped Mott insulators. Physica B: Condensed Matter, 2018, 536, 738-741. | 2.7 | 2 |
| 117 | Reiter's Polaron Wave Function Applied to a t_{2g} Orbital t-J Model. Acta Physica Polonica A, 2009, 115, 110-113. | 0.5 | 2 |
| 118 | Excitation spectra of strong coupling Hubbard Hamiltonian. Physica C: Superconductivity and Its Applications, 1988, 153-155, 1265-1266. | 1.2 | 1 |
| 119 | On dielectric response and quasiparticles in semiconductors and insulators. Physica Scripta, 1988, 38, 613-616. | 2.5 | 1 |
| 120 | Quasiparticle spectra in a $t\text{--}J$ model with electron-phonon interactions. Physica B: Condensed Matter, 1994, 194-196, 1567-1568. | 2.7 | 1 |
| 121 | Low-frequency conductivity of the one-dimensional strong coupling Hubbard model. Physica B: Condensed Matter, 1994, 199-200, 325-327. | 2.7 | 1 |
| 122 | Spin and orbital correlations in spin-orbital models for t_{2g} orbitals. Journal of Magnetism and Magnetic Materials, 2004, 272-276, 440-441. | 2.3 | 1 |
| 123 | Coulomb localization in orbital degenerate, doped Mott insulators. AIP Advances, 2018, 8, . | 1.3 | 1 |
| 124 | Ground state of the 1d-dimensional antiferromagnetic Heisenberg model (abstract). Journal of Applied Physics, 1985, 57, 3360-3360. | 2.5 | 0 |
| 125 | Stephan and Horsch reply. Physical Review Letters, 1994, 72, 2817-2817. | 7.8 | 0 |
| 126 | Wave function and size of spin-polarons in the t-J model. Physica C: Superconductivity and Its Applications, 1997, 282-287, 1805-1806. | 1.2 | 0 |

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| 127 | Quasiparticles and superconductivity in the $t - t\hat{e}^2 - J$ model. Physica C: Superconductivity and Its Applications, 1997, 282-287, 1739-1740. | 1.2 | 0 |
| 128 | Orbitons in ferromagnetic insulating manganites. Physica B: Condensed Matter, 1999, 259-261, 807-809. | 2.7 | 0 |
| 129 | Orbital polarons in LaMnO ₃ . Physica B: Condensed Matter, 2002, 312-313, 740-742. | 2.7 | 0 |
| 130 | Charge dynamics of t - J model and anomalous bond-stretching phonons in cuprates. AIP Conference Proceedings, 2003, , . | 0.4 | 0 |
| 131 | CE correlations in a spin-orbital model for half-doped manganites. Journal of Magnetism and Magnetic Materials, 2004, 272-276, 1794-1795. | 2.3 | 0 |
| 132 | Temperature dependence of the optical spectral weights in. Physica B: Condensed Matter, 2005, 359-361, 1288-1290. | 2.7 | 0 |
| 133 | Spin Structure and Dynamical Magnetic Response of Spin-Orbital Polarons in Lightly Doped Cobaltates. NATO Science for Peace and Security Series B: Physics and Biophysics, 2008, , 49-55. | 0.3 | 0 |
| 134 | Electronic Correlation Effects in Cyclic Polyenes and in Polyacetylene. Springer Series in Solid-state Sciences, 1981, , 126-131. | 0.3 | 0 |
| 135 | Drude Weight and f-Sum Rule of the Hubbard Model at Strong Coupling. NATO ASI Series Series B: Physics, 1995, , 193-200. | 0.2 | 0 |
| 136 | Suppression of anisotropy of kinetic energy in doped vanadium perovskites by charged defects and spin-orbital polarons. Journal of Magnetism and Magnetic Materials, 2022, , 169101. | 2.3 | 0 |