

# Peter Horsch

## List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

137  
papers

4,997  
citations

39  
h-index

66  
g-index

138  
ext. papers

5,181  
ext. citations

3.5  
avg, IF

5.4  
L-index

#	Paper	IF	Citations
137	Suppression of anisotropy of kinetic energy in doped vanadium perovskites by charged defects and spin-orbital polarons. <i>Journal of Magnetism and Magnetic Materials</i> , <b>2022</b> , 169101	2.8	
136	Orbital rotations induced by charges of polarons and defects in doped vanadates. <i>Physical Review B</i> , <b>2021</b> , 103,	3.3	2
135	Defect-Induced Orbital Polarization and Collapse of Orbital Order in Doped Vanadium Perovskites. <i>Physical Review Letters</i> , <b>2019</b> , 122, 127206	7.4	10
134	Fingerprints of spin-orbital polarons and of their disorder in the photoemission spectra of doped Mott insulators with orbital degeneracy. <i>Physical Review B</i> , <b>2018</b> , 97,	3.3	12
133	Localization of holes near charged defects in orbitally degenerate, doped Mott insulators. <i>Physica B: Condensed Matter</i> , <b>2018</b> , 536, 738-741	2.8	2
132	Coulomb localization in orbital degenerate, doped Mott insulators. <i>AIP Advances</i> , <b>2018</b> , 8, 101309	1.5	0
131	Entanglement driven phase transitions in spin-orbital models. <i>New Journal of Physics</i> , <b>2015</b> , 17, 083009	2.9	11
130	Quantum entanglement in the one-dimensional spin-orbital SU(2)×XXZ model. <i>Physical Review B</i> , <b>2015</b> , 92,	3.3	10
129	Defects, Disorder, and Strong Electron Correlations in Orbital Degenerate, Doped Mott Insulators. <i>Physical Review Letters</i> , <b>2015</b> , 115, 206403	7.4	17
128	Dissipationless spin current between two coupled ferromagnets. <i>Physical Review B</i> , <b>2014</b> , 89,	3.3	19
127	Hole propagation in the Kitaev-Heisenberg model: From quasiparticles in quantum Néel states to non-Fermi liquid in the Kitaev phase. <i>Physical Review B</i> , <b>2014</b> , 90,	3.3	18
126	Quantum phase transitions in exactly solvable one-dimensional compass models. <i>Physical Review B</i> , <b>2014</b> , 89,	3.3	18
125	Exact treatment of magnetism-driven ferroelectricity in the one-dimensional compass model. <i>Physical Review B</i> , <b>2014</b> , 90,	3.3	23
124	Defect states and excitations in a Mott insulator with orbital degrees of freedom: Mott-Hubbard gap versus optical and transport gaps in doped systems. <i>Physical Review B</i> , <b>2013</b> , 87,	3.3	22
123	Flux quantization due to monopole and dipole currents. <i>Physical Review B</i> , <b>2013</b> , 87,	3.3	9
122	Hidden quasiparticles and incoherent photoemission spectra in Na <sub>2</sub> IrO <sub>3</sub> . <i>Physical Review Letters</i> , <b>2013</b> , 111, 037205	7.4	24
121	von Neumann entropy spectra and entangled excitations in spin-orbital models. <i>Physical Review B</i> , <b>2012</b> , 86,	3.3	30

120	Magnetic properties of nanoscale compass-Heisenberg planar clusters. <i>Physical Review B</i> , <b>2012</b> , 86,	3-3	27
119	Magnetic excitations in one-dimensional spin-orbital models. <i>Physical Review B</i> , <b>2011</b> , 83,	3-3	15
118	Dimerized ferromagnetic Heisenberg chain. <i>Physical Review B</i> , <b>2011</b> , 84,	3-3	9
117	Spin exchange dominated by charge fluctuations of the Wigner lattice in the chain cuprate Na <sub>5</sub> Cu <sub>3</sub> O <sub>6</sub> . <i>Physical Review B</i> , <b>2011</b> , 84,	3-3	13
116	Effects of spin vacancies on magnetic properties of the Kitaev-Heisenberg model. <i>Physical Review B</i> , <b>2011</b> , 84,	3-3	32
115	Anisotropic optical response of the mixed-valent Mott-Hubbard insulator NaCu <sub>2</sub> O <sub>2</sub> . <i>Physical Review B</i> , <b>2011</b> , 84,	3-3	2
114	Defect states and spin-orbital physics in doped vanadates Y <sub>1-x</sub> CaxVO <sub>3</sub> . <i>Physical Review B</i> , <b>2011</b> , 84,	3-3	21
113	Spin-wave theory for dimerized ferromagnetic chains. <i>Journal of Physics: Conference Series</i> , <b>2010</b> , 200, 022017	0-3	3
112	Compass-Heisenberg model on the square lattice spin order and elementary excitations. <i>Europhysics Letters</i> , <b>2010</b> , 91, 40005	1.6	39
111	Exciton doublet in the Mott-Hubbard insulator LiCuVO <sub>4</sub> identified by spectral ellipsometry. <i>Physical Review Letters</i> , <b>2009</b> , 103, 187401	7-4	17
110	Orbital Fluctuations in the RVO <sub>3</sub> Perovskites. <i>NATO Science for Peace and Security Series B: Physics and Biophysics</i> , <b>2009</b> , 299-324	0-2	2
109	Orbitally induced string formation in the spin-orbital polarons. <i>Physical Review B</i> , <b>2009</b> , 79,	3-3	33
108	Reiter's Polaron Wave Function Applied to a t <sub>2g</sub> Orbital t-J Model. <i>Acta Physica Polonica A</i> , <b>2009</b> , 115, 110-113	0-6	2
107	Thermally activated Peierls dimerization in ferromagnetic spin chains. <i>Physical Review Letters</i> , <b>2008</b> , 101, 157204	7-4	47
106	Magnetism of one-dimensional Wigner lattices and its impact on charge order. <i>Physical Review B</i> , <b>2008</b> , 78,	3-3	4
105	Spectral properties of orbital polarons in Mott insulators. <i>Physical Review B</i> , <b>2008</b> , 78,	3-3	33
104	Absence of hole confinement in transition-metal oxides with orbital degeneracy. <i>Physical Review Letters</i> , <b>2008</b> , 100, 066403	7-4	55
103	Evolution of spin-orbital-lattice coupling in the RVO <sub>3</sub> perovskites. <i>Physical Review Letters</i> , <b>2008</b> , 100, 167205	7-4	67

102	Spin Structure and Dynamical Magnetic Response of Spin-Orbital Polarons in Lightly Doped Cobaltates. <i>NATO Science for Peace and Security Series B: Physics and Biophysics</i> , <b>2008</b> , 49-55	0.2	
101	Spin-orbital entanglement near quantum phase transitions. <i>Physica Status Solidi (B): Basic Research</i> , <b>2007</b> , 244, 2378-2383	1.3	11
100	One-dimensional orbital fluctuations and the exotic magnetic properties of YVO3. <i>Physical Review B</i> , <b>2007</b> , 75,	3.3	32
99	Fractional charges and spin-charge separation in one-dimensional Wigner lattices. <i>Physical Review B</i> , <b>2007</b> , 75,	3.3	9
98	Self-localization of composite spin-lattice polarons. <i>Physical Review Letters</i> , <b>2006</b> , 96, 086402	7.4	24
97	Domain-wall excitations and optical conductivity in one-dimensional Wigner lattices. <i>Physical Review B</i> , <b>2006</b> , 73,	3.3	22
96	Spin-orbital entanglement and violation of the Goodenough-Kanamori rules. <i>Physical Review Letters</i> , <b>2006</b> , 96, 147205	7.4	80
95	Magnetic properties of spin-orbital polarons in lightly doped cobaltates. <i>Physical Review Letters</i> , <b>2006</b> , 96, 216404	7.4	29
94	Microscopic theory of magnetic interactions in KCuF3 and LaMnO3 – The role of charge transfer. <i>Physica Status Solidi (B): Basic Research</i> , <b>2006</b> , 243, 89-93	1.3	4
93	Helicoidal magnetic order in the spin-chain compound NaCu2O2. <i>Physical Review B</i> , <b>2005</b> , 71,	3.3	89
92	Doping dependence of density response and bond-stretching phonons in cuprates. <i>Physica B: Condensed Matter</i> , <b>2005</b> , 359-361, 620-622	2.8	17
91	Temperature dependence of the optical spectral weights in. <i>Physica B: Condensed Matter</i> , <b>2005</b> , 359-361, 1288-1290	2.8	
90	Magnetic interactions and optical spectral weights in Mott insulators with orbital degrees of freedom. <i>Physica Status Solidi (B): Basic Research</i> , <b>2005</b> , 242, 384-391	1.3	2
89	Wigner crystallization in Na3Cu2O4 and Na8Cu5O10 chain compounds. <i>Physical Review Letters</i> , <b>2005</b> , 94, 076403	7.4	40
88	Spin-orbital physics in the optical conductivity of quarter-filled manganites. <i>Physical Review B</i> , <b>2005</b> , 72,	3.3	12
87	Fingerprints of spin-orbital physics in cubic Mott insulators: Magnetic exchange interactions and optical spectral weights. <i>Physical Review B</i> , <b>2005</b> , 72,	3.3	140
86	Theory of optical spectral weights in Mott insulators with orbital degrees of freedom. <i>Physical Review B</i> , <b>2004</b> , 70,	3.3	65
85	Manganites at quarter filling: Role of Jahn-Teller interactions. <i>Physical Review B</i> , <b>2004</b> , 69,	3.3	20

84	Planar Cu and O hole densities in high-Tc cuprates determined with NMR. <i>Physical Review B</i> , <b>2004</b> , 69,	3.3	56
83	CE correlations in a spin-orbital model for half-doped manganites. <i>Journal of Magnetism and Magnetic Materials</i> , <b>2004</b> , 272-276, 1794-1795	2.8	
82	Spin and orbital correlations in spin-orbital models for t <sub>2g</sub> orbitals. <i>Journal of Magnetism and Magnetic Materials</i> , <b>2004</b> , 272-276, 440-441	2.8	1
81	Dimerization versus orbital-moment ordering in a Mott insulator YVO <sub>3</sub> . <i>Physical Review Letters</i> , <b>2003</b> , 91, 257203	7.4	87
80	Orbital polarons in LaMnO <sub>3</sub> . <i>Physica B: Condensed Matter</i> , <b>2002</b> , 312-313, 740-742	2.8	
79	Quasiparticles and the structure of orbital polarons in ferromagnetic LaMnO <sub>3</sub> . <i>Physical Review B</i> , <b>2002</b> , 65,	3.3	16
78	Temperature dependence of optical spectral weights in quarter-filled ladder systems. <i>Physical Review B</i> , <b>2002</b> , 65,	3.3	23
77	Optical Conductivity of Doped Manganites: Comparison of Ferromagnetic Kondo Lattice Models with and without Orbital Degeneracy <b>2002</b> , 103-126		
76	Spin order due to orbital fluctuations: cubic vanadates. <i>Physical Review Letters</i> , <b>2001</b> , 86, 3879-82	7.4	149
75	Density response of the t-J model and renormalization of breathing and half-breathing phonon modes: A slave-fermion calculation. <i>Physica C: Superconductivity and Its Applications</i> , <b>2000</b> , 341-348, 117-120	1.3	20
74	Photoemission spectra of LaMnO <sub>3</sub> controlled by orbital excitations. <i>Physical Review Letters</i> , <b>2000</b> , 85, 5174-7	7.4	53
73	Orbital dynamics in ferromagnetic transition-metal oxides. <i>Physical Review B</i> , <b>1999</b> , 59, 6795-6805	3.3	110
72	Theoretical study of the optical conductivity of NaV <sub>2</sub> O <sub>5</sub> . <i>Physical Review B</i> , <b>1999</b> , 60, R8438-R8441	3.3	27
71	Double-exchange magnets: Spin dynamics in the paramagnetic phase. <i>Physical Review B</i> , <b>1999</b> , 59, R14149, R14152	3.3	15
70	Electron-energy loss spectra and plasmon resonance in cuprates. <i>Physical Review B</i> , <b>1999</b> , 60, R3735-R3738	3.3	14
69	Optical conductivity of colossal-magnetoresistance compounds: Role of orbital degeneracy in the ferromagnetic phase. <i>Physical Review B</i> , <b>1999</b> , 59, 6217-6228	3.3	68
68	Orbitons in ferromagnetic insulating manganites. <i>Physica B: Condensed Matter</i> , <b>1999</b> , 259-261, 807-809	2.8	
67	Optical Conductivity in Doped Manganites with Planar x <sup>2</sup> -y <sup>2</sup> Orbital Order. <i>Physical Review Letters</i> , <b>1999</b> , 82, 3160-3163	7.4	45

66	A new view of the electronic structure of the spin-Peierls compound -NaVO. <i>European Physical Journal B</i> , <b>1998</b> , 5, 367-370	1.2	90
65	Spatial structure of spin polarons in the $t\text{-}U$ model. <i>Physical Review B</i> , <b>1998</b> , 57, 4308-4320	3.3	33
64	Comment on "Generalization of a Fermi Liquid to a Liquid with Fractional Exclusion Statistics in Arbitrary Dimensions: Theory of a Haldane Liquid" <i>Physical Review Letters</i> , <b>1998</b> , 81, 489-489	7.4	7
63	Superconducting pairing of spin polarons in the $t$ - $J$ model. <i>Physical Review B</i> , <b>1997</b> , 55, R11997-R12000	3.3	35
62	Wave function and size of spin-polarons in the $t$ - $J$ model. <i>Physica C: Superconductivity and Its Applications</i> , <b>1997</b> , 282-287, 1805-1806	1.3	
61	Quasiparticles and superconductivity in the $t$ - $t'$ - $J$ model. <i>Physica C: Superconductivity and Its Applications</i> , <b>1997</b> , 282-287, 1739-1740	1.3	
60	Density fluctuations and phonon renormalization in the $t$ - $J$ model. <i>Physica C: Superconductivity and Its Applications</i> , <b>1997</b> , 282-287, 1751-1752	1.3	28
59	Theory of the density fluctuation spectrum of strongly correlated electrons. <i>Physical Review B</i> , <b>1996</b> , 54, R9600-R9603	3.3	45
58	Critical Behavior of the $S=3/2$ Antiferromagnetic Heisenberg Chain. <i>Physical Review Letters</i> , <b>1996</b> , 76, 4955-4958	7.4	66
57	Spin and charge dynamics of the $t$ - $J$ model. <i>Physical Review Letters</i> , <b>1995</b> , 74, 980-983	7.4	65
56	Numerical renormalization-group study of the correlation functions of the antiferromagnetic spin-1/2 Heisenberg chain. <i>Physical Review B</i> , <b>1995</b> , 52, R719-R722	3.3	57
55	Drude Weight and f-Sum Rule of the Hubbard Model at Strong Coupling. <i>NATO ASI Series Series B: Physics</i> , <b>1995</b> , 193-200		
54	Stephan and Horsch reply. <i>Physical Review Letters</i> , <b>1994</b> , 72, 2817	7.4	
53	Spin-polaron wave function for a single hole in an antiferromagnet. <i>Journal of Low Temperature Physics</i> , <b>1994</b> , 95, 343-352	1.3	6
52	Quasiparticle spectra in a $t$ - $J$ model with electron-phonon interactions. <i>Physica B: Condensed Matter</i> , <b>1994</b> , 194-196, 1567-1568	2.8	1
51	Low-frequency conductivity of the one-dimensional strong coupling Hubbard model. <i>Physica B: Condensed Matter</i> , <b>1994</b> , 199-200, 325-327	2.8	1
50	Exact diagonalization study of spin and charge dynamics in the $t$ - $J$ model. <i>Physica C: Superconductivity and Its Applications</i> , <b>1994</b> , 235-240, 2231-2232	1.3	2
49	Spin polarons in the $t$ - $J$ model: Shape and backflow. <i>Physical Review B</i> , <b>1993</b> , 48, 10559-10562	3.3	43

48	Frequency-dependent conductivity of the one-dimensional Hubbard model at strong coupling. <i>Physical Review B</i> , <b>1993</b> , 48, 10595-10598	3-3	26
47	Doping dependence of long-range magnetic order in the t-J model. <i>Physical Review B</i> , <b>1993</b> , 47, 463-469	3-3	54
46	Magnetic effects, dynamical form factors, and electronic instabilities in the Hubbard chain. <i>Physical Review B</i> , <b>1993</b> , 48, 4200-4203	3-3	25
45	Effective mass decrease due to electron-phonon interaction in heavy fermion systems. <i>European Physical Journal B</i> , <b>1993</b> , 90, 125-126	1-2	3
44	Comment on "Phase diagram of the one-dimensional t-J model from variational theory". <i>Physical Review Letters</i> , <b>1992</b> , 68, 3110	7-4	12
43	Charge-spin recombination in the one-dimensional supersymmetric t-J model. <i>Physical Review B</i> , <b>1992</b> , 46, 14624-14654	3-3	38
42	Two-particle fluctuations in one-dimensional generalized Landau liquids. <i>Physical Review B</i> , <b>1992</b> , 46, 14728-14771	3-3	30
41	Effective mass of quasiparticles in a t-J model with electron-phonon interactions. <i>Physical Review B</i> , <b>1992</b> , 46, 14305-14308	3-3	50
40	Two-particle spectral properties of generalized Landau liquids. <i>Physical Review Letters</i> , <b>1992</b> , 68, 871-874	7-4	37
39	Static properties of one-dimensional generalized Landau liquids. <i>Physical Review B</i> , <b>1992</b> , 45, 7899-7917	3-3	38
38	Generalizing the t-J model: Triplet holes. <i>Physical Review B</i> , <b>1992</b> , 46, 5798-5801	3-3	32
37	SINGLE-PARTICLE AND OPTICAL EXCITATIONS IN DOPED MOTT- HUBBARD INSULATORS. <i>International Journal of Modern Physics B</i> , <b>1992</b> , 06, 589-602	1-1	33
36	Angular resolved photoemission spectra, spin-correlations, and Fermi surface of the t-J model at moderate doping. <i>Physica C: Superconductivity and Its Applications</i> , <b>1991</b> , 185-189, 1585-1586	1-3	7
35	Renormalized pseudoparticle description of the one-dimensional Hubbard model thermodynamics. <i>Physical Review B</i> , <b>1991</b> , 44, 9967-9980	3-3	51
34	Fermi surface and dynamics of the t-J model at moderate doping. <i>Physical Review Letters</i> , <b>1991</b> , 66, 2258-2261	7-4	177
33	Application of the Landau-Luttinger Liquid Formulation to the Study of the Magnetic Properties of the 1-D Hubbard Model. <i>International Journal of Modern Physics B</i> , <b>1991</b> , 05, 3-30	1-1	3
32	A single hole in a quantum antiferromagnet: selfconsistent Green's function approach. <i>International Journal of Modern Physics B</i> , <b>1991</b> , 05, 207-217	1-1	12
31	Spin polarons in the t-J model. <i>Physical Review B</i> , <b>1991</b> , 44, 317-331	3-3	399

30	Quasi-Particles in the Strong-Coupling Limit of the 2D Hubbard Model. <i>Europhysics Letters</i> , <b>1990</b> , 11, 675-680	1.6	8
29	Single-particle excitations in a quantum antiferromagnet. <i>Physical Review B</i> , <b>1990</b> , 41, 2017-2029	3.3	194
28	Optical properties of one- and two-dimensional Hubbard and t-J models. <i>Physical Review B</i> , <b>1990</b> , 42, 8736-8739	3.3	124
27	Spontaneous symmetry breaking in the Lieb-Mattis model of antiferromagnetism. <i>Physical Review B</i> , <b>1990</b> , 42, 4663-4669	3.3	27
26	Attractive interactions from repulsive forces in a multiband Hubbard model. <i>Physical Review B</i> , <b>1989</b> , 39, 2924-2927	3.3	45
25	Order Parameter in Quantum Antiferromagnets. <i>Journal of the Physical Society of Japan</i> , <b>1989</b> , 58, 3894-3898	3.8	38
24	Quasiparticles and photoemission spectra in correlated fermion systems. <i>Physica C: Superconductivity and Its Applications</i> , <b>1989</b> , 162-164, 783-784	1.3	46
23	Exact evaluation of the nearest-neighbor Jastrow wave function for the two-dimensional spin-(1/2) Heisenberg antiferromagnet. <i>Physical Review B</i> , <b>1989</b> , 40, 7435-7438	3.3	11
22	Excitation spectra of strong coupling Hubbard Hamiltonian. <i>Physica C: Superconductivity and Its Applications</i> , <b>1988</b> , 153-155, 1265-1266	1.3	1
21	Spin-correlations of the spin-1/2 Heisenberg antiferromagnet on a square lattice. <i>Physica C: Superconductivity and Its Applications</i> , <b>1988</b> , 153-155, 1285-1286	1.3	11
20	Spin-correlations and low lying excited states of the spin-1/2 Heisenberg antiferromagnet on a square lattice. <i>Zeitschrift für Physik B-Condensed Matter</i> , <b>1988</b> , 72, 181-193		114
19	Missing bond-charge repulsion. <i>Physical Review Letters</i> , <b>1988</b> , 60, 70	7.4	73
18	Precise quasiparticle energies and Hartree-Fock bands of semiconductors and insulators. <i>Physical Review B</i> , <b>1988</b> , 37, 8351-8362	3.3	191
17	Accurate selfenergy-corrections to local-density bands of semiconductors and insulators. <i>Physica Scripta</i> , <b>1988</b> , 38, 617-622	2.6	3
16	On dielectric response and quasiparticles in semiconductors and insulators. <i>Physica Scripta</i> , <b>1988</b> , 38, 613-616	2.6	1
15	Finite-size scaling in the ground state of spin-1/2 antiferromagnetic XXZ rings. <i>Physical Review B</i> , <b>1987</b> , 35, 1877-1880	3.3	18
14	On the self-energy of electrons in metals. <i>Solid State Communications</i> , <b>1987</b> , 62, 359-363	1.6	26
13	Self-energy corrections to the local density band structure of semiconductors and insulators. <i>Solid State Communications</i> , <b>1986</b> , 59, 485-490	1.6	17



12	A simple state-dependent exchange functional for calculating Hartree-Fock bandstructures in semiconductors and insulators. <i>Solid State Communications</i> , <b>1985</b> , 54, 741-744	1.6	8
11	Ground state of the one-dimensional antiferromagnetic Heisenberg model. <i>Physical Review B</i> , <b>1985</b> , 31, 1590-1599	3.3	39
10	Ground state of the 1-dimensional antiferromagnetic Heisenberg model (abstract). <i>Journal of Applied Physics</i> , <b>1985</b> , 57, 3360-3360	2.5	
9	Electronic excitations in semiconductors. II. Application of the theory to diamond. <i>Physical Review B</i> , <b>1984</b> , 29, 1870-1881	3.3	75
8	Electronic excitations in semiconductors. General theory. <i>Physical Review B</i> , <b>1983</b> , 28, 5977-5991	3.3	50
7	Close Relation between Localized-Electron Magnetism and the Paramagnetic Wave Function of Completely Itinerant Electrons. <i>Physical Review Letters</i> , <b>1982</b> , 49, 889-892	7.4	189
6	Correlation effects on bond alternation in polyacetylene. <i>Physical Review B</i> , <b>1981</b> , 24, 7351-7360	3.3	154
5	Electronic Correlation Effects in Cyclic Polyenes and in Polyacetylene. <i>Springer Series in Solid-state Sciences</i> , <b>1981</b> , 126-131	0.4	
4	Extension of the Local Approach to excited states of molecules. <i>Zeitschrift für Physik B Condensed Matter and Quanta</i> , <b>1979</b> , 33, 43-49		5
3	On the theory of electronic correlations in solids. <i>Zeitschrift für Physik B Condensed Matter and Quanta</i> , <b>1979</b> , 36, 23-35		60
2	A new aspect of superconductivity in A-15 compounds. <i>Zeitschrift für Physik B Condensed Matter and Quanta</i> , <b>1977</b> , 27, 153-160		30
1	Electron-phonon interaction due to interchain coupling in Nb <sub>3</sub> Sn. <i>Solid State Communications</i> , <b>1976</b> , 18, 27-30	1.6	7