

Stefan Heinze

List of Publications by Year in descending order

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126
docs citations

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times ranked

7620
citing authors

#	ARTICLE	IF	CITATIONS
1	Effects of interlayer exchange on collapse mechanisms and stability of magnetic skyrmions. Physical Review B, 2022, 105, .	1.1	2
2	Electric-field driven stability control of skyrmions in an ultrathin transition-metal film. Npj Computational Materials, 2022, 8, .	3.5	5
3	Atomistic spin simulations of electric-field-assisted nucleation and annihilation of magnetic skyrmions in Pd/Fe/Ir(111). Physical Review B, 2022, 105, .	1.1	5
4	Molecular Chains: Arranging and Programming Logic Gates. Nano Letters, 2021, 21, 550-555.	4.5	6
5	Experimental identification of two distinct skyrmion collapse mechanisms. Nature Physics, 2021, 17, 395-402.	6.5	32
6	Trends of higher-order exchange interactions in transition metal trilayers. Physical Review B, 2021, 104, .	1.1	10
7	Tuning exchange interactions in antiferromagnetic Fe/W(001) by 4d transition-metal overlayers. Physical Review B, 2021, 104, .	1.1	3
8	Distorted $3Q$ state driven by topological-chiral magnetic interactions. Physical Review B, 2021, 104, .	1.1	6
9	Role of higher-order exchange interactions for skyrmion stability. Nature Communications, 2020, 11, 4756.	5.8	59
10	Toward room-temperature nanoscale skyrmions in ultrathin films. Npj Computational Materials, 2020, 6, .	3.5	16
11	Anisotropic vortices on superconducting Nb(110). Physical Review B, 2020, 102, .	1.1	12
12	Discovery of Magnetic Single- and Triple- q States in Mn on $Re(0001)$. Physical Review Letters, 2020, 125, 227205.	2.9	35
13	Quantifying exchange forces of a spin spiral on the atomic scale. Nature Communications, 2020, 11, 1197.	5.8	7
14	Tailoring magnetic interactions in atomic bilayers of Rh and Fe on Re(0001). Physical Review B, 2020, 101, .	1.1	4
15	Electronic and magnetic properties of 3d transition-metal adatoms on Mn/W(110). Physical Review B, 2020, 101, .	1.1	1
16	Stacking-Dependent Spin Interactions in Pd on $Re(0001)$. Physical Review Letters, 2020, 125, 227205.	2.9	9
17	Dead magnetic layers at the interface: Moment quenching through hybridization and frustration. Physical Review Research, 2020, 2, .	1.3	2
18	Isolated zero field sub-10 nm skyrmions in ultrathin Co films. Nature Communications, 2019, 10, 3823.	5.8	84

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19	Tunneling anisotropic magnetoresistance of Pb and Bi adatoms and dimers on Mn/W(110): A first-principles study. <i>Physical Review B</i> , 2019, 100, .	1.1	3
20	Comparison of first-principles methods to extract magnetic parameters in ultrathin films: Co/Pt(111). <i>Physical Review B</i> , 2019, 99, .	1.1	39
21	Preparation and electronic properties of clean superconducting Nb(110) surfaces. <i>Physical Review B</i> , 2019, 99, .	1.1	31
22	Skyrmion lifetime in ultrathin films. <i>Physical Review B</i> , 2019, 99, .	1.1	50
23	Electrical Detection of Domain Walls and Skyrmions in Co Films Using Noncollinear Magnetoresistance. <i>Physical Review Letters</i> , 2019, 123, 237205.	2.9	16
24	Tunneling anisotropic magnetoresistance via molecular π orbitals of Pb dimers. <i>Physical Review B</i> , 2018, 97, .	1.1	4
25	$B-T$ phase diagram of Pd/Fe/Ir(111) computed with parallel tempering Monte Carlo. <i>New Journal of Physics</i> , 2018, 20, 103014.	1.2	50
26	Stability and magnetic properties of Fe double layers on Ir (111). <i>Physical Review B</i> , 2018, 98, .	1.1	3
27	Noncollinear spin density of an adatom on a magnetic surface. <i>Physical Review B</i> , 2018, 98, .	1.1	4
28	Competition of Dzyaloshinskii-Moriya and Higher-Order Exchange Interactions in Rh/Fe Atomic Bilayers on Ir(111). <i>Physical Review Letters</i> , 2018, 120, 207201.	2.9	44
29	Domain walls and Dzyaloshinskii-Moriya interaction in epitaxial Co/Ir(111) and Pt/Co/Ir(111). <i>Physical Review B</i> , 2018, 97, .	1.1	26
30	Trochoidal motion and pair generation in skyrmion and antiskyrmion dynamics under spin-orbit torques. <i>Nature Electronics</i> , 2018, 1, 451-457.	13.1	66
31	First-principles prediction of sub-10-nm skyrmions in Pd/Fe bilayers on Rh(111). <i>Physical Review B</i> , 2018, 98, .	1.1	22
32	Interplay between size and stability of magnetic skyrmions. <i>Nanosystems: Physics, Chemistry, Mathematics</i> , 2018, , 356-363.	0.2	10
33	Designing a molecular magnetic button based on 4d and 5d transition-metal phthalocyanines. <i>Scientific Reports</i> , 2017, 7, 3647.	1.6	4
34	Enhanced skyrmion stability due to exchange frustration. <i>Scientific Reports</i> , 2017, 7, 12299.	1.6	81
35	Dzyaloshinskii-Moriya interaction at an antiferromagnetic interface: First-principles study of Fe/Ir bilayers on Rh(001). <i>Physical Review B</i> , 2017, 96, .	1.1	29
36	Distance- and spin-resolved spectroscopy of iridium atoms on an iron bilayer. <i>Physical Review B</i> , 2016, 94, .	1.1	2

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37	Skyrmions À la carte (Conference Presentation)., 2016, , .		0
38	Engineering skyrmions in transition-metal multilayers for spintronics. Nature Communications, 2016, 7, 11779.	5.8	109
39	How to reveal metastable skyrmionic spin structures by spin-polarized scanning tunneling microscopy. New Journal of Physics, 2016, 18, 055015.	1.2	23
40	Complex Magnetic Exchange Coupling between Co Nanostructures and Ni(111) across Epitaxial Graphene. ACS Nano, 2016, 10, 1101-1107.	7.3	27
41	Ballistic Anisotropic Magnetoresistance of Single-Atom Contacts. Nano Letters, 2016, 16, 1450-1454.	4.5	10
42	Molecular anisotropic magnetoresistance. Physical Review B, 2015, 92, .	1.1	3
43	Topological orbital magnetization and emergent Hall effect of an atomic-scale spin lattice at a surface. Physical Review B, 2015, 92, .	1.1	41
44	Giant magnetization canting due to symmetry breaking in zigzag Co chains on Ir(001). New Journal of Physics, 2015, 17, 023014.	1.2	19
45	Electrical detection of magnetic skyrmions by tunnelling non-collinear magnetoresistance. Nature Nanotechnology, 2015, 10, 1039-1042.	15.6	179
46	Competing Forces during Contact Formation between a Tip and a Single Molecule. Nano Letters, 2015, 15, 5156-5160.	4.5	9
47	Complex trend of magnetic order in Fe clusters on $4d$ transition-metal surfaces. I. Experimental evidence and Monte Carlo simulations. Physical Review B, 2014, 89, .		
48	Complex trend of magnetic order in Fe clusters on $4d$ transition-metal surfaces. II. First-principles calculations. Physical Review B, 2014, 89, .	1.1	6
49	Tunneling anisotropic magnetoresistance effect of single adatoms on a noncollinear magnetic surface. Journal of Physics Condensed Matter, 2014, 26, 394010.	0.7	7
50	Single Electron Charge Sensitivity of Liquid-Gated Carbon Nanotube Transistors. Nano Letters, 2014, 14, 4925-4930.	4.5	27
51	Tailoring magnetic skyrmions in ultra-thin transition metal films. Nature Communications, 2014, 5, 4030.	5.8	227
52	Graphene-mediated exchange coupling between a molecular spin and magnetic substrates. Physical Review B, 2013, 88, .	1.1	17
53	Tunneling Anisotropic Magnetoresistance at the Single-Atom Limit. Physical Review Letters, 2013, 110, 037202.	2.9	30
54	Atomic-scale inversion of spin polarization at an organic-antiferromagnetic interface. Physical Review B, 2013, 88, .	1.1	30

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55	Energy-resolved spin-polarized tunneling and exchange coupling of Co and Cr atoms on Fe islands on W(110). Physical Review B, 2012, 85, .	1.1	10
56	Conductance fingerprints of noncollinear magnetic states in single-atom contacts: A first-principles Wannier-functions study. Physical Review B, 2012, 86, .	1.1	6
57	Conical Spin-Spiral State in an Ultrathin Film Driven by Higher-Order Spin Interactions. Physical Review Letters, 2012, 108, 087205.	2.9	64
58	Tunneling magnetoresistance and exchange interaction in single-atom contacts. Physical Review B, 2012, 86, .	1.1	9
59	Tunneling anisotropic magnetoresistance on the atomic scale. Physical Review B, 2012, 86, .	1.1	39
60	One-dimensional ballistic transport with FLAPW Wannier functions. Physical Review B, 2012, 85, .	1.1	9
61	Electrically Tunable Quantum Anomalous Hall Effect in Graphene Decorated by $\langle \text{Transition-Metal Adatoms} \rangle$. Physical Review Letters, 2012, 108, 056802.	2.9	286
62	Gitter aus magnetischen Wirbeln. Physik in Unserer Zeit, 2012, 43, 6-7.	0.0	1
63	Information Transfer by Vector Spin Chirality in Finite Magnetic Chains. Physical Review Letters, 2012, 108, 197204.	2.9	151
64	Noncollinear magnetism in freestanding and supported monatomic Mn chains. Physical Review B, 2011, 83, .	1.1	23
65	First-principles study of magnetic exchange force microscopy with ferromagnetic and antiferromagnetic tips. Physical Review B, 2011, 84, .	1.1	17
66	Quantitative Measurement of the Magnetic Exchange Interaction across a Vacuum Gap. Physical Review Letters, 2011, 106, 257202.	2.9	45
67	Spontaneous atomic-scale magnetic skyrmion lattice in two dimensions. Nature Physics, 2011, 7, 713-718.	6.5	1,521
68	Spin valve effect in single-atom contacts. New Journal of Physics, 2011, 13, 085011.	1.2	20
69	Imaging and manipulating the spin direction of individual atoms. Nature Nanotechnology, 2010, 5, 350-353.	15.6	126
70	Origin of the spin polarization of magnetic scanning tunneling microscopy tips. Physical Review B, 2010, 82, .	1.1	32
71	Competing magnetic anisotropies in atomic-scale junctions. Physical Review B, 2010, 81, .	1.1	17
72	Real space observation of spin frustration in Cr on a triangular lattice. Physical Review B, 2010, 82, .	1.1	22

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73	Structurally driven magnetic state transition of biatomic Fe chains on Ir(001). Physical Review B, 2009, 80, .	1.1	14
74	Magnetically Hindered Chain Formation in Transition-Metal Break Junctions. Physical Review Letters, 2009, 103, 217201.	2.9	18
75	Probing the Magnetic Exchange Forces of Iron on the Atomic Scale. Nano Letters, 2009, 9, 200-204.	4.5	48
76	Complex magnetism of iron monolayers on hexagonal transition metal surfaces from first principles. Physical Review B, 2009, 79, .	1.1	59
77	First-Principles Simulation of Magnetic Exchange Force Microscopy on Fe/W(001). Nanoscience and Technology, 2009, , 287-301.	1.5	0
78	Atomic-Scale Spin Spiral with a Unique Rotational Sense: Mn Monolayer on W(001). Physical Review Letters, 2008, 101, 027201.	2.9	238
79	Theory and Application of Chain Formation in Break Junctions. Nano Letters, 2008, 8, 2144-2149.	4.5	23
80	Maximally localized Wannier functions within the FLAPW formalism. Physical Review B, 2008, 78, .	1.1	135
81	Role of tip size, orientation, and structural relaxations in first-principles studies of magnetic exchange force microscopy and spin-polarized scanning tunneling microscopy. Physical Review B, 2008, 78, .	1.1	27
82	Complex magnetism of the Fe monolayer on Ir(111). New Journal of Physics, 2007, 9, 396-396.	1.2	33
83	The interplay of structure and spin-orbit strength in the magnetism of metal-benzene sandwiches: from single molecules to infinite wires. Nanotechnology, 2007, 18, 495402.	1.3	49
84	Magnetic order and exchange interactions in monoatomic transition-metal chains. Physical Review B, 2007, 75, .	1.1	61
85	Magnetic Phase Control in Monolayer Films by Substrate Tuning. Physical Review Letters, 2007, 99, 187203.	2.9	35
86	Random-Telegraph-Signal Noise and Device Variability in Ballistic Nanotube Transistors. Nano Letters, 2007, 7, 910-913.	4.5	30
87	Chiral magnetic order at surfaces driven by inversion asymmetry. Nature, 2007, 447, 190-193.	13.7	823
88	On the preparation and electronic properties of clean W(110) surfaces. Surface Science, 2007, 601, 3308-3314.	0.8	61
89	Carbon Nanotube Electronics and Optoelectronics. , 2006, , 381-409.		10
90	Spin-Resolved Electronic Structure of Nanoscale Cobalt Islands on Cu(111). Physical Review Letters, 2006, 96, 237203.	2.9	124

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91	Spin-dependent electronic and magnetic properties of Co nanostructures on Pt(111) studied by spin-resolved scanning tunneling spectroscopy. <i>Physical Review B</i> , 2006, 74, .	1.1	48
92	Atomic spin structure of antiferromagnetic domain walls. <i>Nature Materials</i> , 2006, 5, 477-481.	13.3	134
93	Simulation of spin-polarized scanning tunneling microscopy images of nanoscale non-collinear magnetic structures. <i>Applied Physics A: Materials Science and Processing</i> , 2006, 85, 407-414.	1.1	82
94	Giant Magnetocrystalline Anisotropies of 4d Transition-Metal Monowires. <i>Physical Review Letters</i> , 2006, 96, 147201.	2.9	99
95	Observation of a Complex Nanoscale Magnetic Structure in a Hexagonal Fe Monolayer. <i>Physical Review Letters</i> , 2006, 96, 167203.	2.9	100
96	Electromigration Forces on Ions in Carbon Nanotubes. <i>Physical Review Letters</i> , 2005, 95, 186802.	2.9	37
97	Unoccupied surface state on Pt(111) revealed by scanning tunneling spectroscopy. <i>Physical Review B</i> , 2005, 72, .	1.1	51
98	Revealing Antiferromagnetic Order of the Fe Monolayer on W(001): Spin-Polarized Scanning Tunneling Microscopy and First-Principles Calculations. <i>Physical Review Letters</i> , 2005, 94, 087204.	2.9	133
99	Unexpected trend of magnetic order of 3d transition-metal monolayers on W(001). <i>Physical Review B</i> , 2005, 72, .	1.1	50
100	Scanning tunneling spectroscopy on Co(0001): Spectroscopic signature of stacking faults and dislocation lines. <i>Physical Review B</i> , 2004, 70, .	1.1	25
101	Comparing the local density of states of three- and two-dimensional electron systems by low-temperature scanning tunneling spectroscopy. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2003, 16, 121-128.	1.3	1
102	Electrically Induced Optical Emission from a Carbon Nanotube FET. <i>Science</i> , 2003, 300, 783-786.	6.0	874
103	Unexpected scaling of the performance of carbon nanotube Schottky-barrier transistors. <i>Physical Review B</i> , 2003, 68, .	1.1	122
104	Spin-orbit induced local band structure variations revealed by scanning tunneling spectroscopy. <i>Journal of Physics Condensed Matter</i> , 2003, 15, S679-S692.	0.7	14
105	Drain voltage scaling in carbon nanotube transistors. <i>Applied Physics Letters</i> , 2003, 83, 2435-2437.	1.5	188
106	Electrostatic engineering of nanotube transistors for improved performance. <i>Applied Physics Letters</i> , 2003, 83, 5038-5040.	1.5	90
107	Magnetization-Direction-Dependent Local Electronic Structure Probed by Scanning Tunneling Spectroscopy. <i>Physical Review Letters</i> , 2002, 89, 237205.	2.9	116
108	Carbon Nanotubes as Schottky Barrier Transistors. <i>Physical Review Letters</i> , 2002, 89, 106801.	2.9	1,111

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109	Structural, electronic, and magnetic properties of a Mn monolayer on W(110). <i>Physical Review B</i> , 2002, 66, .	1.1	45
110	Resolving noncollinear magnetism by spin-polarized scanning tunneling microscopy. <i>Journal of Magnetism and Magnetic Materials</i> , 2002, 240, 57-63.	1.0	10
111	Complex magnetism in ultra-thin films: atomic-scale spin structures and resolution by the spin-polarized scanning tunneling microscope. <i>Applied Physics A: Materials Science and Processing</i> , 2002, 75, 25-36.	1.1	26
112	First-Principles Interpretation of Scanning Tunneling Microscopy Applied to Transition-Metal Surfaces: Buried Cu/Cu(001) Surface Alloys. <i>Physica Status Solidi A</i> , 2001, 187, 215-226.	1.7	3
113	Resolving Complex Atomic-Scale Spin Structures by Spin-Polarized Scanning Tunneling Microscopy. <i>Physical Review Letters</i> , 2001, 86, 4132-4135.	2.9	204
114	Experimental Evidence for Intra-Atomic Noncollinear Magnetism at Thin Film Probe Tips. <i>Physical Review Letters</i> , 2001, 86, 2142-2145.	2.9	38
115	Interpreting STM images of the MnCu/Cu(100) surface alloy. <i>Physical Review B</i> , 2000, 62, 2862-2868.	1.1	19
116	Scanning tunneling spectra of impurities in the Fe(001) surface. <i>Physical Review B</i> , 2000, 62, 11118-11125.	1.1	29
117	Real-Space Imaging of Two-Dimensional Antiferromagnetism on the Atomic Scale. <i>Science</i> , 2000, 288, 1805-1808.	6.0	334
118	Scanning Tunneling Microscopy Images of Transition-Metal Structures Buried Below Noble-Metal Surfaces. <i>Physical Review Letters</i> , 1999, 83, 4808-4811.	2.9	26
119	Electric-field-induced changes in scanning tunneling microscopy images of metal surfaces. <i>Chemical Physics Letters</i> , 1999, 315, 167-172.	1.2	20
120	First-principles theory of ultrathin magnetic films. <i>Journal of Physics Condensed Matter</i> , 1999, 11, 9347-9363.	0.7	28
121	Magnetic exchange splitting of the Gd(0001) surface state studied by variable-temperature scanning tunneling spectroscopy. <i>Applied Physics A: Materials Science and Processing</i> , 1998, 66, S121-S124.	1.1	50
122	Temperature-dependent exchange splitting of the magnetic Gd(0001) surface state. <i>Journal of Magnetism and Magnetic Materials</i> , 1998, 184, 155-165.	1.0	44
123	Prediction of bias-voltage-dependent corrugation reversal for STM images of bcc (110) surfaces: W(110), Ta(110), and Fe(110). <i>Physical Review B</i> , 1998, 58, 16432-16445.	1.1	96
124	Chemical identification of atoms at multicomponent surfaces on an atomic scale: CoSi ₂ (100). <i>Physical Review B</i> , 1997, 55, R13444-R13447.	1.1	27