

Samir Lounis

List of Publications by Year in descending order

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114
papers

3,128
citations

159525

30
h-index

182361

51
g-index

119
all docs

119
docs citations

119
times ranked

2509
citing authors

#	ARTICLE	IF	CITATIONS
1	Strength and directionality of surface Ruderman-Kittel-Kasuya-Yosida interaction mapped on the atomic scale. Nature Physics, 2010, 6, 187-191.	6.5	207
2	Atom-by-atom engineering and magnetometry of tailored nanomagnets. Nature Physics, 2012, 8, 497-503.	6.5	201
3	Current-Driven Spin Dynamics of Artificially Constructed Quantum Magnets. Science, 2013, 339, 55-59.	6.0	197
4	Itinerant Nature of Atom-Magnetization Excitation by Tunneling Electrons. Physical Review Letters, 2011, 106, 037205.	2.9	135
5	Topological chiral magnetic interactions driven by emergent orbital magnetism. Nature Communications, 2020, 11, 511.	5.8	104
6	Seeing the Fermi Surface in Real Space by Nanoscale Electron Focusing. Science, 2009, 323, 1190-1193.	6.0	96
7	Perpendicular reading of single confined magnetic skyrmions. Nature Communications, 2015, 6, 8541.	5.8	92
8	Spin Excitations of Individual Fe Atoms on Pt(111): Impact of the Site-Dependent Giant Substrate Polarization. Physical Review Letters, 2013, 111, 157204.	2.9	87
9	Spin-orbit coupling and spin waves in ultrathin ferromagnets: The spin-wave Rashba effect. Physical Review B, 2010, 82, .	1.1	74
10	Tailoring the chiral magnetic interaction between two individual atoms. Nature Communications, 2016, 7, 10620.	5.8	66
11	Magnetism of Nanowires Driven by Novel Even-Odd Effects. Physical Review Letters, 2008, 101, 107204.	2.9	59
12	Topological magnon insulators in two-dimensional van der Waals ferromagnets CrSiTe ₃ and CrGeTe ₃ : Toward intrinsic gap-tunability. Science Advances, 2021, 7, eabi7532.	4.7	56
13	Interplay between the Kondo effect and the Ruderman-Kittel-Kasuya-Yosida interaction. Nature Communications, 2014, 5, 5417.	5.8	55
14	Universality of defect-skyrmion interaction profiles. Nature Communications, 2018, 9, 4395.	5.8	53
15	Theory of local dynamical magnetic susceptibilities from the Korringa-Kohn-Rostoker Green function method. Physical Review B, 2011, 83, .	1.1	52
16	The chiral biquadratic pair interaction. New Journal of Physics, 2019, 21, 083015.	1.2	52
17	Dynamical Magnetic Excitations of Nanostructures from First Principles. Physical Review Letters, 2010, 105, 187205.	2.9	50
18	Absence of a spin-signature from a single Ho adatom as probed by spin-sensitive tunneling. Nature Communications, 2016, 7, 10454.	5.8	49

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19	Self-Assembled Nanometer-Scale Magnetic Networks on Surfaces: Fundamental Interactions and Functional Properties. <i>Advanced Functional Materials</i> , 2011, 21, 1212-1228.	7.8	48
20	Brain palpation from physiological vibrations using MRI. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, 12917-12921.	3.3	48
21	Chirality-driven orbital magnetic moments as a new probe for topological magnetic structures. <i>Nature Communications</i> , 2016, 7, 13613.	5.8	45
22	Noncollinear Korringa-Kohn-Rostoker Green function method: Application to 3d nanostructures on Ni(001). <i>Physical Review B</i> , 2005, 72, .	1.1	43
23	Theory of real space imaging of Fermi surface parts. <i>Physical Review B</i> , 2011, 83, .	1.1	36
24	Mapping the magnetic exchange interactions from first principles: Anisotropy anomaly and application to Fe, Ni, and Co. <i>Physical Review B</i> , 2010, 82, .	1.1	35
25	Relativistic dynamical spin excitations of magnetic adatoms. <i>Physical Review B</i> , 2015, 91, .	1.1	35
26	Ferromagnetic stabilization of ordered B ₂ FeRh thin films. <i>Physical Review B</i> , 2003, 67, .	1.1	34
27	Transverse dynamical magnetic susceptibilities from regular static density functional theory: Evaluation of damping and $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML">\langle \text{mml:mi} \rangle \text{g} \langle / \text{mml:mi} \rangle \langle / \text{mml:math} \rangle$ shifts of spin excitations. <i>Physical Review B</i> , 2015, 91, .	1.1	34
28	Controlling in-gap end states by linking nonmagnetic atoms and artificially-constructed spin chains on superconductors. <i>Nature Communications</i> , 2020, 11, 4707.	5.8	34
29	Fe clusters on Ni and Cu: size and shape dependence of the spin moment. <i>Applied Physics A: Materials Science and Processing</i> , 2006, 82, 103-107.	1.1	31
30	Parity Effect in the Ground state Localization of Antiferromagnetic Chains Coupled to a Ferromagnet. <i>Physical Review Letters</i> , 2013, 110, 157206.	2.9	31
31	Spin-resolved inelastic electron scattering by spin waves in noncollinear magnets. <i>Physical Review B</i> , 2018, 97, .	1.1	31
32	Magnetism and in-gap states of 3d transition metal atoms on superconducting Re. <i>Npj Quantum Materials</i> , 2019, 4, .	1.8	29
33	Magnetic Adatom Induced Skyrmion-Like Spin Texture in Surface Electron Waves. <i>Physical Review Letters</i> , 2012, 108, 207202.	2.9	28
34	Surface-state scattering by adatoms on noble metals: Ab initio calculations using the Korringa-Kohn-Rostoker Green function method. <i>Physical Review B</i> , 2006, 73, .	1.1	26
35	Noncollinear magnetism of Cr and Mn nanoclusters on Ni(111): Changing the magnetic configuration atom by atom. <i>Physical Review B</i> , 2007, 75, .	1.1	26
36	Anomalously large $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline">\langle \text{mml:mi} \rangle \text{g} \langle / \text{mml:mi} \rangle \langle / \text{mml:math} \rangle$ factor of single atoms adsorbed on a metal substrate. <i>Physical Review B</i> , 2011, 84, .	1.1	26

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37	Renormalization of electron self-energies via their interaction with spin excitations: A first-principles investigation. <i>Physical Review B</i> , 2014, 89, .	1.1	26
38	Exchange coupling in transition-metal nanoclusters on Cu(001) and Cu(111) surfaces. <i>Physica Status Solidi (B): Basic Research</i> , 2010, 247, 1187-1196.	0.7	25
39	A gateway towards non-collinear spin processing using three-atom magnets with strong substrate coupling. <i>Nature Communications</i> , 2017, 8, 642.	5.8	25
40	Prospecting chiral multisite interactions in prototypical magnetic systems. <i>Physical Review Research</i> , 2020, 2, .	1.3	25
41	Quantum well states and amplified spin-dependent Friedel oscillations in thin films. <i>Nature Communications</i> , 2014, 5, 5558.	5.8	24
42	Stabilizing spin systems via symmetrically tailored RKKY interactions. <i>Nature Communications</i> , 2019, 10, 2565.	5.8	24
43	Long range and highly tunable interaction between local spins coupled to a superconducting condensate. <i>Nature Communications</i> , 2021, 12, 6722.	5.8	23
44	Spin polarization of platinum (111) induced by the proximity to cobalt nanostripes. <i>Physical Review B</i> , 2011, 83, .	1.1	22
45	Zero-Point Spin-Fluctuations of Single Adatoms. <i>Nano Letters</i> , 2016, 16, 4305-4311.	4.5	21
46	Nonreciprocity of spin waves in noncollinear magnets due to the Dzyaloshinskii-Moriya interaction. <i>Physical Review B</i> , 2020, 102, .	1.1	21
47	Correlating Josephson supercurrents and Shiba states in quantum spins unconventionally coupled to superconductors. <i>Nature Communications</i> , 2021, 12, 1108.	5.8	21
48	Probing the pinning strength of magnetic vortex cores with sub-nanometer resolution. <i>Nature Communications</i> , 2020, 11, 2833.	5.8	19
49	Transverse Transport in Two-Dimensional Relativistic Systems with Nontrivial Spin Textures. <i>Physical Review Letters</i> , 2021, 126, 147203.	2.9	19
50	Chiral magnetism of magnetic adatoms generated by Rashba electrons. <i>New Journal of Physics</i> , 2017, 19, 023010.	1.2	18
51	Short period magnetization texture of B20-MnGe explained by thermally fluctuating local moments. <i>Physical Review B</i> , 2021, 103, .	1.1	18
52	Strong correlation effects in theoretical STM studies of magnetic adatoms. <i>Physical Review B</i> , 2016, 93, .	1.1	17
53	Electron-phonon dynamics in 2D carbon based-hybrids XC (X=Si, Ge, Sn). <i>Journal of Physics Condensed Matter</i> , 2019, 31, 135702.	0.7	17
54	Modeling spin waves in noncollinear antiferromagnets: Spin-flop states, spin spirals, skyrmions, and antiskyrmions. <i>Physical Review B</i> , 2020, 102, .	1.1	17

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55	Non-collinear magnetism of Cr nanostructures on Fe 3ML /Cu(001): First principles and experimental investigations. Europhysics Letters, 2008, 81, 47004.	0.7	16
56	Sub-nanoscale atom-by-atom crafting of skyrmion-defect interaction profiles. Scientific Reports, 2020, 10, 14655.	1.6	16
57	Impurity-dependent gyrotropic motion, deflection and pinning of current-driven ultrasmall skyrmions in PdFe/Ir(111) surface. Journal of Physics Condensed Matter, 2020, 32, 425802.	0.7	15
58	Thermally activated magnetization reversal in monatomic magnetic chains on surfaces studied by classical atomistic spin-dynamics simulations. Journal of Physics Condensed Matter, 2011, 23, 394204.	0.7	14
59	Non-collinear magnetism induced by frustration in transition-metal nanostructures deposited on surfaces. Journal of Physics Condensed Matter, 2014, 26, 273201.	0.7	14
60	Proper and improper chiral magnetic interactions. Physical Review B, 2021, 103, .	1.1	14
61	Interplay of Dzyaloshinskii-Moriya and Kitaev interactions for magnonic properties of Heisenberg-Kitaev honeycomb ferromagnets. Physical Review B, 2021, 103, .	1.1	14
62	Multiple-scattering approach for multi-spin chiral magnetic interactions: application to the one- and two-dimensional Rashba electron gas. New Journal of Physics, 2020, 22, 103003.	1.2	14
63	Complex magnetism of B20-MnGe: from spin-spirals, hedgehogs to monopoles. Journal of Physics Condensed Matter, 2019, 31, 485801.	0.7	12
64	Defect-implantation for the all-electrical detection of non-collinear spin-textures. Nature Communications, 2020, 11, 1602.	5.8	12
65	Longitudinal and transverse spin relaxation times of magnetic single adatoms: An <i>ab initio</i> analysis. Physical Review B, 2017, 96, .	1.1	12
66	Dynamical current-induced ferromagnetic and antiferromagnetic resonances. Physical Review B, 2015, 92, .	1.1	11
67	Dynamical amplification of magnetoresistances and Hall currents up to the THz regime. Scientific Reports, 2017, 7, 3686.	1.6	11
68	Complex magnetic structure and spin waves of the noncollinear antiferromagnet Mn_2Te . Physical Review B, 2022, 105, .	1.1	11
69	Lifetime reduction of surface states at Cu, Ag, and Au(111) caused by impurity scattering. Physical Review B, 2012, 86, .	1.1	10
70	Design of magnetic textures of nanocorrals with an extra adatom. Physical Review B, 2013, 88, .	1.1	10
71	Tuning Paramagnetic Spin Excitations of Single Adatoms. Physical Review Letters, 2017, 119, 017203.	2.9	10
72	A new view on the origin of zero-bias anomalies of Co atoms atop noble metal surfaces. Nature Communications, 2020, 11, 6112.	5.8	10

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73	Theoretical investigation of antiferromagnetic skyrmions in a triangular monolayer. Journal of Physics Condensed Matter, 2020, 32, 425801.	0.7	10
74	Theoretical probing of inelastic spin-excitations in adatoms on surfaces. Surface Science, 2014, 630, 317-324.	0.8	9
75	Comparative study of methodologies to compute the intrinsic Gilbert damping: interrelations, validity and physical consequences. Journal of Physics Condensed Matter, 2019, 31, 255802.	0.7	9
76	Mechanism for ultrafast electric-field driven skyrmion nucleation. Physical Review B, 2021, 104, .	1.1	9
77	Polarisation-dependent single-pulse ultrafast optical switching of an elementary ferromagnet. Communications Physics, 2022, 5, .	2.0	9
78	Spin-orbit enabled all-electrical readout of chiral spin-textures. Nature Communications, 2022, 13, 1576.	5.8	9
79	Observing spin excitations in $3d$ adatoms on Pt(111) with inelastic scanning tunneling spectroscopy: A first-principles perspective. Physical Review B, 2016, 93, .	1.1	8
80	First-principles investigation of spin-wave dispersions in surface-reconstructed Co thin films on W(110). Physical Review B, 2017, 95, .	1.1	8
81	Halogenation of SiC for band-gap engineering and excitonic functionalization. Journal of Physics Condensed Matter, 2017, 29, 455001.	0.7	8
82	DFT investigation of magnetocrystalline anisotropy of Mn-doped transition-metal dichalcogenide monolayers. Physical Review Materials, 2021, 5, .	0.9	8
83	Anomalous excitations of atomically crafted quantum magnets. Science Advances, 2022, 8, eabi7291.	4.7	8
84	Ab initio investigation of impurity-induced in-gap states in Bi ₂ Te ₃ and Bi ₂ Se ₃ . Physical Review B, 2018, 98, .	1.1	7
85	Trends in the hyperfine interactions of magnetic adatoms on thin insulating layers. Npj Computational Materials, 2021, 7, .	3.5	7
86	Spin waves in the collinear antiferromagnetic phase of Mn_5U . Physical Review B, 2021, 103, .		
87	Generalization of the Landau-Lifshitz-Gilbert equation by multi-body contributions to Gilbert damping for non-collinear magnets. Journal of Physics Condensed Matter, 2022, 34, 285802.	0.7	6
88	Microscopic theory of the residual surface resistivity of Rashba electrons. Physical Review B, 2016, 94, .	1.1	5
89	RKKY-like contributions to the magnetic anisotropy energy: 3d adatoms on Pt(111) surface. Physical Review B, 2016, 94, .	1.1	5
90	Engineering elliptical spin-excitations by complex anisotropy fields in Fe adatoms and dimers on Cu(111). Physical Review B, 2017, 96, .	1.1	5

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91	Spin-fluctuation and spin-relaxation effects of single adatoms from first principles. Journal of Physics Condensed Matter, 2018, 30, 343002.	0.7	5
92	Dependence of the magnetic interactions in MoS ₂ monolayer on Mn-doping configurations. Journal of Physics Condensed Matter, 2019, 31, 465802.	0.7	5
93	Equivalence of wave function matching and Green's functions methods for quantum transport: generalized Fisher-Lee relation. Journal of Physics Condensed Matter, 2020, 32, 355302.	0.7	5
94	Friedel Oscillations Induced by Magnetic Skyrmions: From Scattering Properties to All-Electrical Detection. Nanomaterials, 2021, 11, 194.	1.9	5
95	Antiferromagnetic polarization at Mn/V(001) interfaces. Physical Review B, 2004, 69, .	1.1	4
96	Interatomic orbital magnetism: The case of 3d adatoms deposited on the Pt(111) surface. Physical Review B, 2018, 98, .	1.1	4
97	Anatomy of magnetic anisotropy induced by Rashba spin-orbit interactions. Physical Review B, 2018, 98, .	1.1	4
98	Impurity-induced orbital magnetization in a Rashba electron gas. Physical Review B, 2018, 98, .	1.1	4
99	Unoccupied surface and interface states in Pd thin films deposited on Fe/Ir(111) surface. New Journal of Physics, 2019, 21, 063015.	1.2	4
100	Spin-orbit torques and their associated effective fields from gigahertz to terahertz. Communications Physics, 2020, 3, .	2.0	4
101	Complex magnetism of the two-dimensional antiferromagnetic Ge ₂ F: from a Néel spin-texture to a potential antiferromagnetic skyrmion. RSC Advances, 2021, 11, 8654-8663.	1.7	4
102	Spin dynamics of 3d and 4d impurities embedded in prototypical topological insulators. Physical Review Materials, 2019, 3, .	0.9	4
103	Zero-point magnetic exchange interactions. Physical Review Research, 2020, 2, .	1.3	4
104	Insights into the orbital magnetism of noncollinear magnetic systems. , 2017, , .		4
105	Reply to "Comment on "Proper and improper chiral magnetic interactions" . Physical Review B, 2022, 105, .	1.1	4
106	Ab initio study of the magnetic configurations on the (001) surfaces of binary FePd and FeRh ordered alloys. Journal of Magnetism and Magnetic Materials, 2002, 240, 368-370.	1.0	3
107	Ab initio study of the origin of the dead magnetic Ni layers at the Ni/Pt() interface. Surface Science, 2002, 518, 57-62.	0.8	3
108	Giant perpendicular magnetic anisotropy energies in CoPt thin films: impact of reduced dimensionality and imperfections. Journal of Physics Condensed Matter, 2016, 28, 496002.	0.7	3

