Riccardo Hertel

List of Publications by Year
in descending order

108 papers	5,785 citations	81900 39 h-index	74163 75 g-index
110 all docs	110 docs citations	110 times ranked	3994 citing authors

#	Article	IF	Citations
1	Magnetic vortex core reversal by excitation with short bursts of an alternating field. Nature, 2006, 444, 461-464.	27.8	756
2	Three-dimensional nanomagnetism. Nature Communications, 2017, 8, 15756.	12.8	398
3	Ultrafast Nanomagnetic Toggle Switching of Vortex Cores. Physical Review Letters, 2007, 98, 117201.	7.8	286
4	Domain-Wall Induced Phase Shifts in Spin Waves. Physical Review Letters, 2004, 93, 257202.	7.8	281
5	Beating the Walker Limit with Massless Domain Walls in Cylindrical Nanowires. Physical Review Letters, 2010, 104, 057201.	7.8	200
6	Advances in Magnetics Roadmap on Spin-Wave Computing. IEEE Transactions on Magnetics, 2022, 58, 1-72.	2.1	179
7	Exchange Explosions: Magnetization Dynamics during Vortex-Antivortex Annihilation. Physical Review Letters, 2006, 97, 177202.	7.8	175
8	Micromagnetic simulations of magnetostatically coupled Nickel nanowires. Journal of Applied Physics, 2001, 90, 5752-5758.	2.5	168
9	Fast domain wall dynamics in magnetic nanotubes: Suppression of Walker breakdown and Cherenkov-like spin wave emission. Applied Physics Letters, 2011, 99, .	3.3	157
10	Magnetization reversal dynamics in nickel nanowires. Physica B: Condensed Matter, 2004, 343, 206-210.	2.7	141
11	Theory of the inverse Faraday effect in metals. Journal of Magnetism and Magnetic Materials, 2006, 303, L1-L4.	2.3	136
12	Spectral Analysis of Topological Defects in an Artificial Spin-Ice Lattice. Physical Review Letters, 2013, 110, 117205.	7.8	127
13	Computational micromagnetism of magnetization processes in nickel nanowires. Journal of Magnetism and Magnetic Materials, 2002, 249, 251-256.	2.3	126
14	Micromagnetic study of magnetic configurations in submicron permalloy disks. Physical Review B, 2003, 67, .	3.2	113
15	Non-Ising and chiral ferroelectric domain walls revealed by nonlinear optical microscopy. Nature Communications, 2017, 8, 15768.	12.8	113
16	Current-induced magnetic vortex core switching in a Permalloy nanodisk. Applied Physics Letters, 2007, 91, .	3.3	103
17	Curvature-Induced Asymmetric Spin-Wave Dispersion. Physical Review Letters, 2016, 117, 227203.	7.8	100
18	CURVATURE-INDUCED MAGNETOCHIRALITY. Spin, 2013, 03, 1340009.	1.3	97

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19	Speedup of FEM Micromagnetic Simulations With Graphical Processing Units. IEEE Transactions on Magnetics, 2010, 46, 2303-2306.	2.1	94
20	Chiral symmetry breaking and pair-creation mediated Walker breakdown in magnetic nanotubes. Applied Physics Letters, 2012, 100, 252401.	3.3	77
21	Switching behavior of single nanowires inside dense nickel nanowire arrays. IEEE Transactions on Magnetics, 2002, 38, 2571-2573.	2.1	73
22	Ultrafast domain wall dynamics in magnetic nanotubes and nanowires. Journal of Physics Condensed Matter, 2016, 28, 483002.	1.8	71
23	Element-Specific Magnetic Hysteresis of Individual 18 nm Fe Nanocubes. Nano Letters, 2011, 11, 1710-1715.	9.1	64
24	Direct Observation of the Single-Domain Limit of Fe Nanomagnets by Spin-Polarized Scanning Tunneling Spectroscopy. Physical Review Letters, 2003, 91, 127201.	7.8	63
25	Finite element calculations on the single-domain limit of a ferromagnetic cubeâ€"a solution to Î¼MAG Standard Problem No. 3. Journal of Magnetism and Magnetic Materials, 2002, 238, 185-199.	2.3	61
26	Ferromagnetic resonance study of thin film antidot arrays: Experiment and micromagnetic simulations. Physical Review B, 2007, 75, .	3.2	60
27	Magnetization dynamics in spin torque nano-oscillators: Vortex state versus uniform state. Physical Review B, 2009, 80, .	3.2	57
28	Micromagnetism and the microstructure in nanocrystalline materials. Journal of Magnetism and Magnetic Materials, 1997, 175, 177-192.	2.3	51
29	Three-dimensional magnetic-flux-closure patterns in mesoscopic Fe islands. Physical Review B, 2005, 72, .	3.2	49
30	Adaptive finite element mesh refinement techniques in three-dimensional micromagnetic modeling. IEEE Transactions on Magnetics, 1998, 34, 3922-3930.	2.1	48
31	Multiscale and multimodel simulation of Bloch-point dynamics. Physical Review B, 2014, 89, .	3.2	47
32	Growth and magnetism of Fe nanostructures on W(001). Physical Review B, 2003, 68, .	3.2	46
33	Computational micromagnetism of magnetic structures and magnetisation processes in small particles. Journal of Magnetism and Magnetic Materials, 2000, 215-216, 11-17.	2.3	43
34	Spin-Cherenkov effect and magnonic Mach cones. Physical Review B, 2013, 88, .	3.2	43
35	Asymmetric spin-wave dispersion in ferromagnetic nanotubes induced by surface curvature. Physical Review B, 2017, 95, .	3.2	43
36	Thickness dependence of magnetization structures in thin Permalloy rectangles. International Journal of Materials Research, 2002, 93, 957-962.	0.8	42

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37	Magnetic drops in a soft-magnetic cylinder. Journal of Magnetism and Magnetic Materials, 2004, 278, L291-L297.	2.3	42
38	Ultrafast dynamics of a magnetic antivortex: Micromagnetic simulations. Physical Review B, 2008, 77, .	3.2	42
39	Computation of the magnetic domain structure in bulk permalloy. Physical Review B, 1999, 60, 7366-7378.	3.2	41
40	Spin-torque-induced dynamics at fine-split frequencies in nano-oscillators with two stacked vortices. Nature Communications, 2015, 6, 6409.	12.8	40
41	Vortex states Ã la carte. Nature Nanotechnology, 2013, 8, 318-320.	31.5	38
42	Broken vertex symmetry and finite zero-point entropy in the artificial square ice ground state. Physical Review B, 2015, 92, .	3.2	38
43	Virgin domain structures in mesoscopic Co patterns: Comparison between simulation and experiment. Journal of Applied Physics, 2005, 98, 043901.	2.5	37
44	Configurational stability and magnetization processes in submicron permalloy disks. Physical Review B, 2003, 67, .	3.2	35
45	Calculations of three-dimensional magnetic normal modes in mesoscopic permalloy prisms with vortex structure. Physical Review B, 2007, 76, .	3.2	35
46	Proposal for a micromagnetic standard problem for materials with Dzyaloshinskiiâ€“Moriya interaction. New Journal of Physics, 2018, 20, 113015.	2.9	35
47	Influence of the dynamic dipolar interaction on the current-induced core switch in vortex pairs. Physical Review B, 2009, 79, .	3.2	34
48	Tuning the domain wall orientation in thin magnetic strips using induced anisotropy. Applied Physics Letters, 2007, 91, .	3.3	31
49	Imaging ferroelectric domains in multiferroics using a lowâ€energy electron microscope in the mirror operation mode. Physica Status Solidi - Rapid Research Letters, 2010, 4, 22-24.	2.4	31
50	Asymmetric spin-transfer torque in single-crystalline<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi mathvariant="normal">Fe</mml:mi><mml:mo>âˆ•</mml:mo><mml:mi mathvariant="normal">Ag</mml:mi><mml:mo>âˆ•</mml:mo><mml:mi mathvariant="normal">Fe</mml:mi></mml:mrow></mml:math>nanopillars. Physical Review B, 2007, 76, .	3.2	29
51	Shedding light on non-Ising polar domain walls: Insight from second harmonic generation microscopy and polarimetry analysis. Journal of Applied Physics, 2021, 129, .	2.5	25
52	Influence of domain wall interactions on nanosecond switching in magnetic tunnel junctions. Physical Review B, 2005, 72, .	3.2	22
53	Macroscopic drift current in the inverse Faraday effect. Physical Review B, 2015, 91, .	3.2	22
54	Spin-transfer torque induced vortex dynamics in Fe/Ag/Fe nanopillars. Journal Physics D: Applied Physics, 2011, 44, 384002.	2.8	21

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55	Electric field control of three-dimensional vortex states in core-shell ferroelectric nanoparticles. Acta Materialia, 2020, 200, 256-273.	7.9	21
56	Influence of perpendicular magnetic fields on the domain structure of permalloy microstructures grown on thin membranes. Physical Review B, 2008, 77, .	3.2	20
57	Mechanisms for the symmetric and antisymmetric switching of a magnetic vortex core: Differences and common aspects. Physical Review B, 2015, 91, .	3.2	20
58	Switching a magnetic antivortex core with ultrashort field pulses. Journal of Applied Physics, 2008, 103, 07B115.	2.5	19
59	Interface Magnetoelectric Coupling in Co/Pb(Zr,Ti)O₃. ACS Applied Materials & Interfaces, 2016, 8, 7553-7563.	8.0	19
60	Micromagnetic simulation of the domain structure of a flat rectangular permalloy prism. Journal of Applied Physics, 1999, 85, 6190-6192.	2.5	17
61	Angular dependence of magnetization switching for a multidomain dot: Experiment and simulation. Physical Review B, 2004, 70, .	3.2	17
62	Analytic form of transverse head-to-head domain walls in thin cylindrical wires. Journal of Magnetism and Magnetic Materials, 2015, 379, 45-49.	2.3	17
63	Magnetic domains in a textured Co nanowire. Journal of Magnetism and Magnetic Materials, 2004, 283, 82-88.	2.3	16
64	Energy thresholds in the magnetic vortex core reversal. Journal of Physics: Conference Series, 2011, 303, 012005.	0.4	16
65	Disentangling the Physical Contributions to the Electrical Resistance in Magnetic Domain Walls: A Multiscale Study. Physical Review Letters, 2012, 108, 077201.	7.8	15
66	Concentric domains in patterned thin films with perpendicular magnetic anisotropy. Europhysics Letters, 2003, 64, 810-815.	2.0	14
67	Large-scale magnetostatic field calculation in finite element micromagnetics with<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si3.gif" overflow="scroll"><mml:mrow><mml:msup><mml:mrow><mml:mi mathvariant="script">H</mml:mi></mml:mrow><mml:mrow><mml:mn>2</mml:mn></mml:mrow></mml:msup></mml:mrow></mml:m Journal of Magnetism and Magnetic Materials, 2019, 477, 118-123.	2.3	14
68	Numerical micromagnetism of strong inhomogeneities. Journal of Magnetism and Magnetic Materials, 2014, 362, 7-13.	2.3	13
69	Three-dimensional chiral magnetization structures in FeGe nanospheres. Physical Review B, 2021, 103, .	3.2	13
70	Chiral polarization textures induced by the flexoelectric effect in ferroelectric nanocylinders. Physical Review B, 2021, 104, .	3.2	13
71	Dynamics of solenoidal magnetic structures in soft magnetic thin-film elements. Journal of Magnetism and Magnetic Materials, 2004, 270, 364-370.	2.3	12
72	Switchable magnetic frustration in buckyball nanoarchitectures. Applied Physics Letters, 2021, 118, .	3.3	12

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73	Critical thicknesses of domain formations in cubic particles and thin films. Physica B: Condensed Matter, 2004, 343, 229-235.	2.7	11
74	Dynamic properties of arrays of ferromagnetic rectangular bars. Journal of Applied Physics, 2007, 101, 09F516.	2.5	11
75	Quenched Slonczewski windmill in spin-torque vortex oscillators. Physical Review B, 2012, 86, .	3.2	11
76	Amorphous, low magnetostriction tips for spin-polarized scanning tunneling microscopy. Journal of Magnetism and Magnetic Materials, 2002, 249, 368-374.	2.3	10
77	Spin-Transfer Induced Dynamic Modes in Single-Crystalline Feâ€“Agâ€“Fe Nanopillars. IEEE Transactions on Magnetics, 2008, 44, 1951-1956.	2.1	10
78	Azimuthal Spin Wave Modes Excited in an Elliptical Nanomagnet With Vortex Pair States. IEEE Transactions on Magnetics, 2010, 46, 1675-1678.	2.1	10
79	Depinning of Transverse Domain Walls from Notches in Magnetostatically Coupled Nanostrips. Applied Physics Express, 2011, 4, 033001.	2.4	10
80	Geometrically Constrained Skyrmions. Magnetochemistry, 2021, 7, 26.	2.4	10
81	Microscopy of mesoscopic ferromagnetic systems with slow electrons. Surface and Interface Analysis, 2006, 38, 1622-1627.	1.8	9
82	Flipping magnetic vortex cores on the picosecond time scale. Physica B: Condensed Matter, 2008, 403, 334-337.	2.7	9
83	Multiscale simulation of Bloch point dynamics in thick nanowires. , 2015, , 653-677.		9
84	Flexo-elastic control factors of domain morphology in core-shell ferroelectric nanoparticles: Soft and rigid shells. Acta Materialia, 2021, 212, 116889.	7.9	9
85	Flexosensitive polarization vortices in thin ferroelectric films. Physical Review B, 2021, 104, .	3.2	9
86	Resonant modes of vortex structures in soft-magnetic nanodiscs. Journal of Magnetism and Magnetic Materials, 2004, 272-276, 655-656.	2.3	8
87	Formation and transformation of vortex structures in soft ferromagnetic ellipsoids. Journal of Applied Physics, 2008, 103, 07E739.	2.5	8
88	For faster magnetic switchingâ€”destroy and rebuild. Physics Magazine, 2009, 2, .	0.1	8
89	Hybrid finite-element/boundary-element method to calculate Oersted fields. Journal of Magnetism and Magnetic Materials, 2014, 369, 189-196.	2.3	8
90	Irreversible magnetization processes in a soft magnetic platelet. Physica B: Condensed Matter, 2000, 275, 1-4.	2.7	7

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91	Defectâ€Driven Magnetization Configuration of Isolated Linear Assemblies of Iron Oxide Nanoparticles. Advanced Functional Materials, 2019, 29, 1903927.	14.9	7
92	Mode Anticipation Fields for Symmetry Breaking. IEEE Transactions on Magnetics, 2007, 43, 2911-2913.	2.1	5
93	The magnetoelectrochemical switch. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 10433-10437.	7.1	5
94	Magnetization Reversal of Micron-Scale Cobalt Structures With a Nanoconstriction. IEEE Transactions on Magnetics, 2007, 43, 2854-2856.	2.1	3
95	Large amplitude oscillations (switching) of bi-stable vortex structures in zero field. Journal of Magnetism and Magnetic Materials, 2010, 322, 1389-1391.	2.3	3
96	Injection locking of single-vortex and double-vortex spin-torque oscillators. , 2011, , .		3
97	Role of the sample boundaries in the problem of dissipative magnetization dynamics. Journal of Magnetism and Magnetic Materials, 2014, 360, 126-130.	2.3	3
98	Spin-polarized scanning tunneling spectroscopy study of Fe nanomagnets on W(001). Journal of Applied Physics, 2004, 95, 7025-7027.	2.5	2
99	Proposal for a direct measurement of the nonadiabatic spin-transfer torque parameter<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>Î²</mml:mi></mml:math>and the spin-polarization rate<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>P</mml:mi></mml:math>. Physical Review B, 2014, 89, .	3.2	2
100	Switching behaviour of single nanowires inside dense nickel nanowire arrays. , 0, , .		1
101	High-Density Nickel Nanowire Arrays. , 2005, , 165-184.		1
102	Applications of Multi-scale Modeling to Spin Dynamics in Spintronics Devices. , 2018, , 1-26.		1
103	Micromagnetic study of magnetic domain structures in submicron Cu/Ni/Cu(001) discs. , 0, , .		0
104	Nickel nanowire arrays based on imprint lithography. , 0, , .		0
105	Spin-Transfer Torque Effects in Single-Crystalline Nanopillars. Springer Series in Materials Science, 2013, , 25-56.	0.6	0
106	Computational Micromagnetism of Magnetic Structures and Magnetization Processes in Thin Platelets and Small Particles. , 2001, , 345-362.		0
107	Applications of Multi-scale Modeling to Spin Dynamics in Spintronics Devices. , 2020, , 401-426.		0
108	Thickness dependence of magnetization structures in thin Permalloy rectangles. International Journal of Materials Research, 2022, 93, 957-962.	0.3	0