

# Claas Abert

## List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/4788758/publications.pdf>

Version: 2024-02-01

75  
papers

1,583  
citations

361413

20  
h-index

330143

37  
g-index

77  
all docs

77  
docs citations

77  
times ranked

1382  
citing authors

#	ARTICLE	IF	CITATIONS
1	Proposal for a micromagnetic standard problem: Domain wall pinning at phase boundaries. Journal of Magnetism and Magnetic Materials, 2022, 548, 168875.	2.3	3
2	A topology optimization algorithm for magnetic structures based on a hybrid FEM-BEM method utilizing the adjoint approach. Scientific Reports, 2022, 12, 1119.	3.3	3
3	Advances in Magnetics Roadmap on Spin-Wave Computing. IEEE Transactions on Magnetics, 2022, 58, 1-72.	2.1	179
4	Efficient solution strategy to couple micromagnetic simulations with ballistic transport in magnetic tunnel junctions. Physical Review B, 2022, 105, .	3.2	2
5	Complex free-space magnetic field textures induced by three-dimensional magnetic nanostructures. Nature Nanotechnology, 2022, 17, 136-142.	31.5	39
6	Domain Wall Automotion in Three-Dimensional Magnetic Helical Interconnectors. ACS Nano, 2022, 16, 8860-8868.	14.6	20
7	Full analytical solution for the magnetic field of uniformly magnetized cylinder tiles. Journal of Magnetism and Magnetic Materials, 2022, 559, 169482.	2.3	6
8	Intrinsic DMI-free skyrmion formation and robust dynamic behaviors in magnetic hemispherical shells. Scientific Reports, 2021, 11, 3886.	3.3	17
9	Chiral switching and dynamic barrier reductions in artificial square ice. New Journal of Physics, 2021, 23, 033024.	2.9	9
10	Domain-Wall Damping in Ultrathin Nanostripes with Dzyaloshinskii-Moriya Interaction. Physical Review Applied, 2021, 15, .	3.8	5
11	Non-Planar Geometrical Effects on the Magnetoelectrical Signal in a Three-Dimensional Nanomagnetic Circuit. ACS Nano, 2021, 15, 6765-6773.	14.6	16
12	Strayfield calculation for micromagnetic simulations using true periodic boundary conditions. Scientific Reports, 2021, 11, 9202.	3.3	5
13	Dipolar-stabilized first and second-order antiskyrmions in ferrimagnetic multilayers. Nature Communications, 2021, 12, 2611.	12.8	29
14	Micromagnetic modeling of magnetic domain walls in curved cylindrical nanotubes and nanowires. Applied Physics Letters, 2021, 118, .	3.3	10
15	Extended micromagnetic model for the detection of superparamagnetic labels using a GMR vortex sensor. Journal of Physics Communications, 2021, 5, 075017.	1.2	2
16	Tension-free Dirac strings and steered magnetic charges in 3D artificial spin ice. Npj Computational Materials, 2021, 7, .	8.7	7
17	Robust formation of skyrmion and skyrmionium in magnetic hemispherical shells and their dynamic switching. Physical Review B, 2021, 104, .	3.2	3
18	An Experiment-Based Numerical Treatment of Spin Wave Modes in Periodically Porous Materials. Physica Status Solidi (B): Basic Research, 2020, 257, 1900296.	1.5	3

#	ARTICLE	IF	CITATIONS
19	Stability of skyrmion formation and its abnormal dynamic modes in magnetic nanotubes. Physical Review B, 2020, 102, .	3.2	10
20	Control of the noncollinear interlayer exchange coupling. Science Advances, 2020, 6, .	10.3	17
21	Dependence of energy barrier reduction on collective excitations in square artificial spin ice: A comprehensive comparison of simulation techniques. Physical Review B, 2020, 102, .	3.2	11
22	Thermally superactive artificial kagome spin ice structures obtained with the interfacial Dzyaloshinskii-Moriya interaction. Physical Review B, 2020, 102, .	3.2	15
23	Magnetic Position System Design Method Applied to Three-Axis Joystick Motion Tracking. Sensors, 2020, 20, 6873.	3.8	7
24	Micromagnetic Simulations of Submicron Vortex Structures for the Detection of Superparamagnetic Labels. Sensors, 2020, 20, 5819.	3.8	1
25	Control of damping in perpendicularly magnetized thin films using spin-orbit torques. Physical Review B, 2020, 101, .	3.2	8
26	Spintronics in Micromagnetics. , 2020, , 985-1008.		0
27	Hybrid FFT algorithm for fast demagnetization field calculations on non-equidistant magnetic layers. Journal of Magnetism and Magnetic Materials, 2020, 503, 166592.	2.3	8
28	Stochastic ferrimagnetic Landau-Lifshitz-Bloch equation for finite magnetic structures. Physical Review B, 2019, 100, .	3.2	10
29	Micromagnetics and spintronics: models and numerical methods. European Physical Journal B, 2019, 92, 1.	1.5	67
30	Design of spin-injection-layer in all-in-plane spin-torque-oscillator for microwave assisted magnetic recording. Journal of Magnetism and Magnetic Materials, 2019, 476, 361-370.	2.3	8
31	Large scale finite-element simulation of micromagnetic thermal noise. Journal of Magnetism and Magnetic Materials, 2019, 475, 408-414.	2.3	16
32	Solving the inverse magnetostatic problem using fictitious magnetic charges. AIP Advances, 2018, 8, 056005.	1.3	1
33	Convergence of highly parallel stray field calculation using the fast multipole method on irregular meshes. AIP Advances, 2018, 8, 056019.	1.3	0
34	Efficient micromagnetic modelling of spin-transfer torque and spin-orbit torque. AIP Advances, 2018, 8, .	1.3	7
35	A repulsive skyrmion chain as a guiding track for a racetrack memory. AIP Advances, 2018, 8, .	1.3	16
36	Comparison of Sensitivity and Low-Frequency Noise Contributions in Giant-Magnetoresistive and Tunneling-Magnetoresistive Spin-Valve Sensors with a Vortex-State Free Layer. Physical Review Applied, 2018, 10, .	3.8	19

#	ARTICLE	IF	CITATIONS
37	GPU-Accelerated Atomistic Energy Barrier Calculations of Skyrmion Annihilations. IEEE Transactions on Magnetics, 2018, 54, 1-5.	2.1	7
38	Additive Manufactured and Topology Optimized Passive Shimming Elements for Permanent Magnetic Systems. Scientific Reports, 2018, 8, 14651.	3.3	24
39	Back-Hopping in Spin-Transfer-Torque Devices: Possible Origin and Countermeasures. Physical Review Applied, 2018, 9, .	3.8	18
40	Topologically protected vortex structures for low-noise magnetic sensors with high linear range. Nature Electronics, 2018, 1, 362-370.	26.0	60
41	ODES: a high level interface to ODE and DAE solvers. Journal of Open Source Software, 2018, 3, 165.	4.6	6
42	Solving Large-Scale Inverse Magnetostatic Problems using the Adjoint Method. Scientific Reports, 2017, 7, 40816.	3.3	24
43	A fast finite-difference algorithm for topology optimization of permanent magnets. Journal of Applied Physics, 2017, 122, .	2.5	15
44	3D Printing of Polymer-Bonded Rare-Earth Magnets With a Variable Magnetic Compound Fraction for a Predefined Stray Field. Scientific Reports, 2017, 7, 9419.	3.3	80
45	Significant reduction of critical currents in MRAM designs using dual free layer with perpendicular and in-plane anisotropy. Applied Physics Letters, 2017, 110, .	3.3	5
46	Highly parallel demagnetization field calculation using the fast multipole method on tetrahedral meshes with continuous sources. Journal of Magnetism and Magnetic Materials, 2017, 442, 409-416.	2.3	8
47	Topology optimized and 3D printed polymer-bonded permanent magnets for a predefined external field. Journal of Applied Physics, 2017, 122, .	2.5	51
48	Fieldlike and Dampinglike Spin-Transfer Torque in Magnetic Multilayers. Physical Review Applied, 2017, 7, .	3.8	20
49	Noise Reduction Based on an Fe <sup>2+</sup> /Rh Interlayer in Exchange-Coupled Heat-Assisted Recording Media. Physical Review Applied, 2017, 8, .	3.8	9
50	Contactless and absolute linear displacement detection based upon 3D printed magnets combined with passive radio-frequency identification. AIP Advances, 2017, 7, .	1.3	7
51	Efficiently reducing transition curvature in heat-assisted magnetic recording with state-of-the-art write heads. Applied Physics Letters, 2017, 110, 182406.	3.3	4
52	Areal density optimizations for heat-assisted magnetic recording of high-density media. Journal of Applied Physics, 2016, 119, .	2.5	20
53	Basic noise mechanisms of heat-assisted-magnetic recording. Journal of Applied Physics, 2016, 120, .	2.5	13
54	Passive wireless strain measurement based upon the Villari effect and giant magnetoresistance. Applied Physics Letters, 2016, 109, .	3.3	7

#	ARTICLE	IF	CITATIONS
55	Heat-assisted magnetic recording of bit-patterned media beyond 10 <sup>6</sup> Tb/in <sup>2</sup> . Applied Physics Letters, 2016, 108, .	3.3	53
56	3D print of polymer bonded rare-earth magnets, and 3D magnetic field scanning with an end-user 3D printer. Applied Physics Letters, 2016, 109, .	3.3	168
57	Reduction of critical current density for out-of-plane mode oscillation in a mag-flip spin torque oscillator using highly spin-polarized Co <sub>2</sub> Fe(Ga <sub>0.5</sub> Ge <sub>0.5</sub> ) spin injection layer. Applied Physics Letters, 2016, 108, .	3.3	23
58	Influence of grain size and exchange interaction on the LLB modeling procedure. Journal of Applied Physics, 2016, 120, 223903.	2.5	5
59	Superior bit error rate and jitter due to improved switching field distribution in exchange spring magnetic recording media. Scientific Reports, 2016, 6, 27048.	3.3	2
60	A self-consistent spin-diffusion model for micromagnetics. Scientific Reports, 2016, 6, 16.	3.3	40
61	Unexpected Width of Minor Magnetic Hysteresis Loops in Nanostructures. IEEE Transactions on Magnetics, 2016, 52, 1-4.	2.1	3
62	Macroscopic simulation of isotropic permanent magnets. Journal of Magnetism and Magnetic Materials, 2016, 401, 875-879.	2.3	6
63	Coupling of dynamical micromagnetism and a stationary spin drift-diffusion equation: A step towards a fully self-consistent spintronics framework. Physica B: Condensed Matter, 2016, 486, 88-91.	2.7	9
64	A three-dimensional spin-diffusion model for micromagnetics. Scientific Reports, 2015, 5, 14855.	3.3	51
65	The influence of spin-diffusion effects on current driven domain-wall motion. , 2015, , .		0
66	A full-fledged micromagnetic code in fewer than 70 lines of NumPy. Journal of Magnetism and Magnetic Materials, 2015, 387, 13-18.	2.3	10
67	Reactivable passive radio-frequency identification temperature indicator. Journal of Applied Physics, 2015, 117, .	2.5	4
68	Fundamental limits in heat-assisted magnetic recording and methods to overcome it with exchange spring structures. Journal of Applied Physics, 2015, 117, 163913.	2.5	28
69	Landau-Lifshitz-Bloch equation for exchange-coupled grains. Physical Review B, 2014, 90, .	3.2	35
70	Efficient energy minimization in finite-difference micromagnetics: Speeding up hysteresis computations. Journal of Applied Physics, 2014, 116, 123908.	2.5	7
71	FFT-based Kronecker product approximation to micromagnetic long-range interactions. Mathematical Models and Methods in Applied Sciences, 2014, 24, 1877-1901.	3.3	7
72	Spin-polarized transport in ferromagnetic multilayers: An unconditionally convergent FEM integrator. Computers and Mathematics With Applications, 2014, 68, 639-654.	2.7	26

#	ARTICLE	IF	CITATIONS
73	magnum.fe: A micromagnetic finite-element simulation code based on FEniCS. Journal of Magnetism and Magnetic Materials, 2013, 345, 29-35.	2.3	61
74	Numerical methods for the stray-field calculation: A comparison of recently developed algorithms. Journal of Magnetism and Magnetic Materials, 2013, 326, 176-185.	2.3	57
75	A Fast Finite-Difference Method for Micromagnetics Using the Magnetic Scalar Potential. IEEE Transactions on Magnetics, 2012, 48, 1105-1109.	2.1	31