Hans A De Raedt

List of Publications by Year in descending order

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258 papers

6,243 citations

39 h-index 98798 67 g-index

262 all docs $\begin{array}{c} 262 \\ \\ \text{docs citations} \end{array}$

262 times ranked 3700 citing authors

#	Article	IF	Citations
1	Benchmarking Advantage and D-Wave 2000Q quantum annealers with exact cover problems. Quantum Information Processing, 2022, 21, 1.	2.2	36
2	GPU-accelerated simulations of quantum annealing and the quantum approximate optimization algorithm. Computer Physics Communications, 2022, 278, 108411.	7.5	10
3	Quantum annealing for hard 2-satisfiability problems: Distribution and scaling of minimum energy gap and success probability. Physical Review A, 2022, 105, .	2.5	2
4	Random State Technology. Journal of the Physical Society of Japan, 2021, 90, 012001.	1.6	27
5	Quantum versus classical dynamics in spin models: Chains, ladders, and square lattices. Physical Review B, 2021, 104, .	3.2	12
6	Quantum annealing with trigger Hamiltonians: Application to 2-satisfiability and nonstoquastic problems. Physical Review A, 2021, 104, .	2.5	5
7	Support vector machines on the D-Wave quantum annealer. Computer Physics Communications, 2020, 248, 107006.	7.5	82
8	General error mitigation for quantum circuits. Quantum Information Processing, 2020, 19, 1.	2.2	10
9	Toward a High-Resolution Reconstruction of 3D Nerve Fiber Architectures and Crossings in the Brain Using Light Scattering Measurements and Finite-Difference Time-Domain Simulations. Physical Review X, 2020, 10, .	8.9	20
10	Discrete-Event Simulation of an Extended Einstein-Podolsky-Rosen-Bohm Experiment. Frontiers in Physics, 2020, 8, .	2.1	6
11	Benchmarking the quantum approximate optimization algorithm. Quantum Information Processing, 2020, 19, 1.	2.2	79
12	Real-time simulation of flux qubits used for quantum annealing. Physical Review A, 2020, 101, .	2.5	5
13	Long-Time Correlations in Single-Neutron Interferometry Data. Journal of the Physical Society of Japan, 2020, 89, 064005.	1.6	O
14	Separation of conditions as a prerequisite for quantum theory. Annals of Physics, 2019, 403, 112-135.	2.8	5
15	Diattenuation Imaging reveals different brain tissue properties. Scientific Reports, 2019, 9, 1939.	3.3	26
16	Massively parallel quantum computer simulator, eleven years later. Computer Physics Communications, 2019, 237, 47-61.	7.5	65
17	Optical bistability in a low-photon-density regime. Physical Review A, 2018, 98, .	2.5	8
18	Real-time dynamics of typical and untypical states in nonintegrable systems. Physical Review B, 2018, 97,	3.2	24

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19	Antiferromagnetic order without recourse to staggered fields. Physical Review B, 2018, 98, .	3.2	3
20	Logical inference derivation of the quantum theoretical description of Stern–Gerlach and Einstein–Podolsky–Rosen–Bohm experiments. Annals of Physics, 2018, 396, 96-118.	2.8	9
21	Size and temperature dependence of the line shape of ESR spectra of the XXZ antiferromagnetic chain. Physical Review B, 2017, 95, .	3.2	3
22	Real-time broadening of nonequilibrium density profiles and the role of the specific initial-state realization. Physical Review B, 2017, 95, .	3.2	34
23	Elastic and viscous bond components in the adhesion of colloidal particles and fibrillated streptococci to QCM-D crystal surfaces with different hydrophobicities using Kelvin–Voigt and Maxwell models. Physical Chemistry Chemical Physics, 2017, 19, 25391-25400.	2.8	11
24	Charge diffusion in the one-dimensional Hubbard model. Physical Review E, 2017, 96, 020105.	2.1	15
25	Gate-error analysis in simulations of quantum computers with transmon qubits. Physical Review A, 2017, 96, .	2.5	32
26	Relaxation, thermalization, and Markovian dynamics of two spins coupled to a spin bath. Physical Review E, 2017, 96, 053306.	2.1	17
27	Benchmarking gate-based quantum computers. Computer Physics Communications, 2017, 220, 44-55.	7.5	51
28	The photon identification loophole in EPRB experiments: computer models with single-wing selection. Open Physics, 2017, 15, 713-733.	1.7	21
29	Discrete-Event Simulation Unmasks the Quantum Cheshire Cat. Journal of Computational and Theoretical Nanoscience, 2017, 14, 2268-2283.	0.4	1
30	Quantum Decoherence and Thermalization at Finite Temperatures of Non-Degenerate Spin Systems via Small Spin Environments. Journal of Physics: Conference Series, 2016, 750, 012021.	0.4	1
31	From Boole to Leggett-Garg: Epistemology of Bell-Type Inequalities. Advances in Mathematical Physics, 2016, 2016, 1-7.	0.8	10
32	Logical inference approach to relativistic quantum mechanics: Derivation of the Klein–Gordon equation. Annals of Physics, 2016, 372, 74-82.	2.8	5
33	Quantum theory as plausible reasoning applied to data obtained by robust experiments. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2016, 374, 20150233.	3.4	7
34	Quantification of the viscoelasticity of the bond of biotic and abiotic particles adhering to solid-liquid interfaces using a window-equipped quartz crystal microbalance with dissipation. Colloids and Surfaces B: Biointerfaces, 2016, 148, 255-262.	5.0	6
35	The digital computer as a metaphor for the perfect laboratory experiment: Loophole-free Bell experiments. Computer Physics Communications, 2016, 209, 42-47.	7.5	12
36	Dynamics of open quantum spin systems: An assessment of the quantum master equation approach. Physical Review E, 2016, 94, 022126.	2.1	13

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37	Computer Simulation of Einstein-Podolsky-Rosen-Bohm Experiments. Open Systems and Information Dynamics, 2016, 23, 1650010.	1.2	1
38	Quantum decoherence and thermalization at finite temperature within the canonical-thermal-state ensemble. Physical Review A, $2016, 93, .$	2.5	11
39	Eigenstate thermalization hypothesis and quantum Jarzynski relation for pure initial states. Physical Review E, 2016, 94, 012125.	2.1	14
40	Decoherence wave in magnetic systems and creation of NÃ $@$ el antiferromagnetic state by measurement. Physical Review B, 2016, 93, .	3.2	10
41	Breakdown of statistical inference from some random experiments. Computer Physics Communications, 2016, 200, 168-175.	7.5	10
42	Finite-Difference Time-Domain Simulation for Three-Dimensional Polarized Light Imaging. Lecture Notes in Computer Science, 2016, , 73-85.	1.3	3
43	Counterfactual Definiteness and Bell's Inequality. Journal of Modern Physics, 2016, 07, 1651-1660.	0.6	5
44	A Jones matrix formalism for simulating three-dimensional polarized light imaging of brain tissue. Journal of the Royal Society Interface, 2015, 12, 20150734.	3.4	47
45	Computation of ESR spectra from the time evolution of the magnetization: Comparison of autocorrelation and Wiener-Khinchin-relation-based methods. Physical Review B, 2015, 92, .	3.2	5
46	Finite-temperature charge transport in the one-dimensional Hubbard model. Physical Review B, 2015, 92,	3.2	21
47	Fingerprints of disorder source in graphene. Physical Review B, 2015, 92, .	3.2	34
48	Quantum theory as a description of robust experiments: Derivation of the Pauli equation. Annals of Physics, 2015, 359, 166-186.	2.8	17
49	Mysterious quantum Cheshire cat: an illusion. , 2015, , .		1
50	Quantum theory as a description of robust experiments: application to Stern-Gerlach and Einstein-Podolsky-Rosen-Bohm experiments. , 2015, , .		3
51	Discrete-event simulation of uncertainty in single-neutron experiments. Frontiers in Physics, 2014, 2, .	2.1	6
52	Event-based simulation of quantum physics experiments. International Journal of Modern Physics C, 2014, 25, 1430003.	1.7	22
53	Event-by-event simulation of single-neutron experiments to test uncertainty relations. Physica Scripta, 2014, T163, 014016.	2.5	0

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55	Macroscopically deterministic Markovian thermalization in finite quantum spin systems. Physical Review E, 2014, 89, 012131.	2.1	13
56	Event-by-event simulation of a quantum delayed-choice experiment. Computer Physics Communications, 2014, 185, 3109-3118.	7.5	2
57	Sparkling feather reflections of a bird-of-paradise explained by finite-difference time-domain modeling. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 4363-4368.	7.1	98
58	Quantum theory as the most robust description of reproducible experiments. Annals of Physics, 2014, 347, 45-73.	2.8	37
59	Event-Based Simulation of Quantum Physics Experiments. , 2014, , 237-305.		2
60	Event-based simulation of neutron experiments: interference, entanglement and uncertainty relations. Journal of Physics: Conference Series, 2014, 504, 012026.	0.4	1
61	Nanoporous gold formation by dealloying: A Metropolis Monte Carlo study. Computer Physics Communications, 2013, 184, 1562-1569.	7.5	40
62	Quantum decoherence scaling with bath size: Importance of dynamics, connectivity, and randomness. Physical Review A, 2013, 87, .	2.5	14
63	Equilibration and thermalization of classical systems. New Journal of Physics, 2013, 15, 033009.	2.9	19
64	Event-by-event simulation of experiments to create entanglement and violate Bell inequalities. , 2013, , .		0
65	Data analysis of Einstein-Podolsky-Rosen-Bohm laboratory experiments. Proceedings of SPIE, 2013, , .	0.8	15
66	Nonclassical effects in two-photon interference experiments: an event-by-event simulation. Proceedings of SPIE, 2013, , .	0.8	0
67	Quantum theory as the most robust description of reproducible experiments: application to a rigid linear rotator. Proceedings of SPIE, 2013, , .	0.8	6
68	Comment on "Experimental Test of an Event-Based Corpuscular Model Modification as an Alternative to Quantum Mechanics― Journal of the Physical Society of Japan, 2013, 82, 086001.	1.6	1
69	<i>Shine and Hide:</i> Biological Photonic Crystals on the Wings of Weevils. Materials Research Society Symposia Proceedings, 2013, 1504, 1.	0.1	4
70	Photon and spin dependence of the resonance line shape in the strong coupling regime. Journal of Physics B: Atomic, Molecular and Optical Physics, 2012, 45, 124010.	1.5	7
71	Hemispherical Brillouin zone imaging of a diamond-type biological photonic crystal. Journal of the Royal Society Interface, 2012, 9, 1609-1614.	3.4	54
72	<i>Brilliant camouflage</i> : photonic crystals in the diamond weevil, <i>Entimus imperialis</i> Proceedings of the Royal Society B: Biological Sciences, 2012, 279, 2524-2530.	2.6	80

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73	Einstein-Podolsky-Rosen-Bohm laboratory experiments: Data analysis and simulation. AIP Conference Proceedings, 2012, , .	0.4	18
74	Event-based simulation of interference with alternatingly blocked particle sources. , 2012, , .		2
75	Event-by-event simulation of nonclassical effects in two-photon interference experiments. Physica Scripta, 2012, T151, 014005.	2.5	7
76	Corpuscular event-by-event simulation of quantum optics experiments: application to a quantum-controlled delayed-choice experiment. Physica Scripta, 2012, T151, 014004.	2.5	4
77	Proposal for an Interference Experiment to Test the Applicability of Quantum Theory to Event-Based Processes. Journal of the Physical Society of Japan, 2012, 81, 034001.	1.6	7
78	Iridescence and spectral filtering of the gyroid-type photonic crystals in <i>Parides sesostris</i> wing scales. Interface Focus, 2012, 2, 681-687.	3.0	77
79	An Efficient Algorithm for Simulating the Real-Time Quantum Dynamics of a Single Spin-1/2 Coupled to Specific Spin-1/2 Baths. Journal of Physics: Conference Series, 2012, 402, 012019.	0.4	3
80	Hidden assumptions in the derivation of the theorem of Bell. Physica Scripta, 2012, T151, 014002.	2.5	19
81	Quantum simulations and experiments on Rabi oscillations of spin qubits: Intrinsic vs extrinsic damping. Physical Review B, 2012, 85, .	3.2	35
82	Analysis of multipath interference in three-slit experiments. Physical Review A, 2012, 85, .	2.5	46
83	Dynamics of a Single Spin-1/2 Coupled to x- and y-Spin Baths: Algorithm and Results. Physics Procedia, 2012, 34, 90-99.	1.2	3
84	Sexual Dichromatism of the Damselfly Calopteryx japonica Caused by a Melanin-Chitin Multilayer in the Male Wing Veins. PLoS ONE, 2012, 7, e49743.	2.5	90
85	Discrete-event simulation of neutron interferometry experiments. , 2012, , .		5
86	Eventâ€byâ€event simulation of quantum phenomena. Annalen Der Physik, 2012, 524, 393-410.	2.4	16
87	Event-Based Simulation of Neutron Interferometry Experiments. Quantum Matter, 2012, 1, 20-40.	0.2	17
88	Boole and Bell inequality. , 2011, , .		1
89	Towards an event-based corpuscular model for optical phenomena. , 2011, , .		0
90	A modified Mach-Zehnder experiment to test the applicability of quantum theory to single-particle experiments. Proceedings of SPIE, $2011, \ldots$	0.8	0

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91	<l>A Special Issue on</l> Foundations of Computational and Theoretical Nanoscience. Journal of Computational and Theoretical Nanoscience, 2011, 8, 887-888.	0.4	0
92	Event-based Simulation Model for Quantum Optics Experiments. , 2011, , .		0
93	Real-Time Quantum Dynamics of a Single Spin 1/2 Coupled to a Spin Bath. Physics Procedia, 2011, 15, 33-36.	1.2	2
94	Event-based simulation of light propagation in lossless dielectric media. Computer Physics Communications, 2011, 182, 726-734.	7.5	9
95	Optical conductivity of disordered graphene beyond the Dirac cone approximation. Physical Review B, 2011, 84, .	3.2	59
96	Classical and quantum annealing in the median of three-satisfiability. Physical Review A, 2011, 83, .	2.5	5
97	Extended Boole-Bell Inequalities Applicable to Quantum Theory. Journal of Computational and Theoretical Nanoscience, 2011, 8, 1011-1039.	0.4	41
98	Event-Based Corpuscular Model for Quantum Optics Experiments. Journal of Computational and Theoretical Nanoscience, 2011, 8, 1052-1080.	0.4	36
99	Reply to the Comment by A. J. Leggett and Anupam Garg. Europhysics Letters, 2010, 91, 40002.	2.0	5
100	Event-by-Event Simulation of a Quantum Eraser Experiment. Journal of Computational and Theoretical Nanoscience, 2010, 7, 1771-1782.	0.4	9
101	Particle-based simulation approach for single-particle interference experiments: Application to double-slit experiments. AIP Conference Proceedings, 2010, , .	0.4	1
102	Coexistence of full which-path information and interference in Wheeler's delayed-choice experiment with photons. Physica E: Low-Dimensional Systems and Nanostructures, 2010, 42, 348-353.	2.7	10
103	Event-by-event simulation of quantum phenomena. Physica E: Low-Dimensional Systems and Nanostructures, 2010, 42, 298-302.	2.7	3
104	Event-by-event simulation of Wheeler's delayed-choice experiment. Physics Procedia, 2010, 6, 27-30.	1.2	0
105	Reflectivity of the gyroid biophotonic crystals in the ventral wing scales of the Green Hairstreak butterfly, <i>Callophrys rubi </i> Journal of the Royal Society Interface, 2010, 7, 765-771.	3.4	91
106	Approach to Equilibrium in Nano-scale Systems at Finite Temperature. Journal of the Physical Society of Japan, 2010, 79, 124005.	1.6	25
107	Quantum interference with macroscopic objects. AIP Conference Proceedings, 2010, , .	0.4	2
108	Corpuscular Model of Two-Beam Interference and Double-Slit Experiments with Single Photons. Journal of the Physical Society of Japan, 2010, 79, 074401.	1.6	16

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109	Electronic transport in disordered bilayer and trilayer graphene. Physical Review B, 2010, 82, .	3.2	82
110	Modeling electronic structure and transport properties of graphene with resonant scattering centers. Physical Review B, 2010, 82, .	3.2	218
111	Nagaoka ferromagnetism in large-spin fermionic and bosonic systems. Physical Review B, 2009, 80, .	3.2	6
112	Quantum spinodal phenomena. Physical Review B, 2009, 79, .	3.2	5
113	Origin of the Canonical Ensemble: Thermalization with Decoherence. Journal of the Physical Society of Japan, 2009, 78, 094003.	1.6	28
114	Possible experience: From Boole to Bell. Europhysics Letters, 2009, 87, 60007.	2.0	41
115	Quantum response to time-dependent external fields. Journal of Physics: Conference Series, 2009, 143, 012005.	0.4	6
116	Event-by-event Simulation of EPR-Bohm Experiments. Springer Proceedings in Physics, 2009, , 66-70.	0.2	0
117	Event-by-Event Simulation ofÂEinstein-Podolsky-Rosen-Bohm Experiments. Foundations of Physics, 2008, 38, 322-347.	1.3	38
118	Electron energy level statistics in graphene quantum dots. JETP Letters, 2008, 88, 607-610.	1.4	41
119	Computer simulation of Wheeler's delayed-choice experiment with photons. Europhysics Letters, 2008, 82, 40004.	2.0	15
120	Decoherence by a spin thermal bath: Role of spin-spin interactions and initial state of the bath. Physical Review B, 2008, 77, .	3.2	30
121	Shenet al.Reply:. Physical Review Letters, 2008, 101, .	7.8	4
122	Event-by-event simulation of quantum phenomena. Brazilian Journal of Physics, 2008, 38, .	1.4	1
123	Event-by-Event Simulation of Quantum Cryptography Protocols. Journal of Computational and Theoretical Nanoscience, 2008, 5, 490-504.	0.4	17
124	Evolution of a quantum spin system to its ground state: Role of entanglement and interaction symmetry. Physical Review A, 2007, 75, .	2.5	14
125	Domain-wall dynamics near a quantum critical point. Physical Review B, 2007, 75, .	3.2	6
126	Event-Based Computer Simulation Model of Aspect-Type Experiments Strictly Satisfying Einstein's Locality Conditions. Journal of the Physical Society of Japan, 2007, 76, 104005.	1.6	38

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127	A computer program to simulate Einstein–Podolsky–Rosen–Bohm experiments with photons. Computer Physics Communications, 2007, 176, 642-651.	7.5	30
128	Unconditionally stable perfectly matched layer boundary conditions. Physica Status Solidi (B): Basic Research, 2007, 244, 3497-3505.	1.5	2
129	Reply to comment on "A local realist model for correlations of the singlet state" by M.P. Seevinck and JÁ Larsson. European Physical Journal B, 2007, 58, 55-59.	1.5	11
130	Massively parallel quantum computer simulator. Computer Physics Communications, 2007, 176, 121-136.	7.5	138
131	Event-by-Event Simulation of Quantum Phenomena: Application to Einstein-Podolosky-Rosen-Bohm Experiments. Journal of Computational and Theoretical Nanoscience, 2007, 4, 957-991.	0.4	46
132	Image transfer by cascaded stack of photonic crystal and air layers. Optics Express, 2006, 14, 879.	3.4	6
133	Giant enhancement of quantum decoherence by frustrated environments. JETP Letters, 2006, 84, 99-103.	1.4	12
134	Efficient data processing and quantum phenomena: Single-particle systems. Computer Physics Communications, 2006, 174, 803-817.	7.5	5
135	A local realist model for correlations of the singlet state. European Physical Journal B, 2006, 53, 139-142.	1.5	46
136	Quantum Dynamics of Spin Wave Propagation through Domain Walls. Journal of the Physical Society of Japan, 2006, 75, 084703.	1.6	4
137	Spontaneous-Emission Rate in Microcavities: Application to Two-Dimensional Photonic Crystals. Physical Review Letters, 2006, 96, 120401.	7.8	12
138	New Method to Simulate Quantum Interference Using Deterministic Processes and Application to Event-based Simulation of Quantum Computation. Journal of the Physical Society of Japan, 2005, 74, 16-25.	1.6	26
139	Deterministic event-based simulation of quantum phenomena. Computer Physics Communications, 2005, 171, 19-39.	7.5	37
140	Event-based simulation of single-photon beam splitters and Mach-Zehnder interferometers. Europhysics Letters, 2005, 69, 861-867.	2.0	39
141	Simulation of Quantum Computation: A Deterministic Event-Based Approach. Journal of Computational and Theoretical Nanoscience, 2005, 2, 227-239.	0.4	26
142	Energy-level diagrams of high-spin and low-spin molecules. Physica Status Solidi (B): Basic Research, 2004, 241, 1180-1185.	1.5	21
143	Dzyaloshinskii-Moriya interactions and adiabatic magnetization dynamics in molecular magnets. Physical Review B, 2004, 70, .	3.2	74
144	Unified framework for numerical methods to solve the time-dependent Maxwell equations. Computer Physics Communications, 2003, 156, 43-61.	7. 5	14

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146	One-step finite-difference time-domain algorithm to solve the Maxwell equations. Physical Review E, 2003, 67, 056706.	2.1	24
147	Aspects of mathematical morphology. Advances in Imaging and Electron Physics, 2003, , 119-194.	0.2	31
148	Higher-order unconditionally stable algorithms to solve the time-dependent Maxwell equations. Physical Review E, 2002, 65, 066705.	2.1	21
149	A simulator for quantum computer hardware. Nanotechnology, 2002, 13, 23-28.	2.6	3
150	Quantum spin dynamics as a model for quantum computer operation. European Physical Journal B, 2002, 27, 15-28.	1.5	3
151	Title is missing!. European Physical Journal B, 2002, 27, 15-28.	1.5	6
152	Integral-geometry morphological image analysis. Physics Reports, 2001, 347, 461-538.	25.6	227
153	Number partitioning on a quantum computer. Physics Letters, Section A: General, Atomic and Solid State Physics, 2001, 290, 227-233.	2.1	9
154	Quantum Monte Carlo method for attractive Coulomb potentials. Physical Review E, 2001, 64, 016704.	2.1	11
155	Unconditionally stable algorithms to solve the time-dependent Maxwell equations. Physical Review E, 2001, 64, 066705.	2.1	45
156	Quantum Computer Emulator. Computer Physics Communications, 2000, 132, 1-20.	7.5	28
157	Morphological image analysis. Computer Physics Communications, 2000, 132, 94-103.	7.5	40
158	Morphological Characterization of Spatial Patterns. Progress of Theoretical Physics Supplement, 2000, 138, 543-548.	0.1	14
159	Feedback effect on Landau-Zener-Stückelberg transitions in magnetic systems. Physical Review B, 2000, 62, 13880-13883.	3.2	14
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161	Morphological image analysis of quantum motion in billiards. Physical Review E, 2000, 63, 016201.	2.1	6
162	Quantum Mechanical Transitions in a Dissipative Environment. Progress of Theoretical Physics Supplement, 2000, 138, 501-506.	0.1	1

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163	Quantum transport in disordered mesoscopic ferromagnetic films. Physical Review B, 1999, 60, 15970-15974.	3.2	12
164	Phase separation in models for correlated electrons. Physical Review B, 1999, 59, 4565-4567.	3.2	7
165	Comment on "Ensemble-Average Spectrum of Aharonov-Bohm Conductance Oscillations: Evidence for Spin-Orbit-Induced Berry's Phase― Physical Review Letters, 1999, 83, 1700-1700.	7.8	4
166	Field-tuned quantum tunneling of the magnetization. Journal of Applied Physics, 1998, 83, 6937-6939.	2.5	7
167	Nontrivial Response of Nanoscale Uniaxial Magnets to an Alternating Field. Physical Review Letters, 1998, 80, 1525-1528.	7.8	33
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