

Ruggero Vaia

List of Publications by Year in descending order

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361045

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docs citations

96
times ranked

825
citing authors

#	ARTICLE	IF	CITATIONS
1	Quantum Monte Carlo study of $S=1/2$ weakly anisotropic antiferromagnets on the square lattice. Physical Review B, 2003, 67, .	1.1	110
2	The effective potential and effective Hamiltonian in quantum statistical mechanics. Journal of Physics Condensed Matter, 1995, 7, 7891-7938.	0.7	80
3	Two-dimensional XXZ model on a square lattice: A Monte Carlo simulation. Physical Review B, 1995, 52, 10221-10231.	1.1	79
4	Long quantum channels for high-quality entanglement transfer. New Journal of Physics, 2011, 13, 123006.	1.2	79
5	Detection of XY Behavior in Weakly Anisotropic Quantum Antiferromagnets on the Square Lattice. Physical Review Letters, 2003, 90, 167205.	2.9	56
6	Phase transitions induced by easy-plane anisotropy in the classical Heisenberg antiferromagnet on a triangular lattice: A Monte Carlo simulation. Physical Review B, 1998, 58, 273-281.	1.1	50
7	Quantum thermodynamics of solids by means of an effective potential. Physical Review B, 1992, 45, 2088-2096.	1.1	48
8	Temperature and Spin Dependent Correlation Length of the Quantum Heisenberg Antiferromagnet on the Square Lattice. Physical Review Letters, 1996, 77, 3439-3442.	2.9	47
9	Field-induced XY behavior in the $S=1/2$ antiferromagnet on the square lattice. Physical Review B, 2003, 68, .	1.1	46
10	Quantum thermodynamics in classical phase space. Physical Review A, 1992, 45, 8418-8429.	1.0	45
11	Thermodynamic properties of a quantum chain with nearest-neighbor anharmonic interactions. Physical Review B, 1990, 41, 9588-9591.	1.1	34
12	Monte Carlo computations of the quantum kinetic energy of rare-gas solids. Physical Review B, 1993, 47, 14923-14931.	1.1	33
13	Frequency moments and spectral shape of quantum chains. Physical Review B, 1992, 46, 8839-8857.	1.1	32
14	Quantum thermodynamics of the easy-plane ferromagnetic chain. Physical Review B, 1992, 46, 11601-11616.	1.1	30
15	Spectral problem for quasi-uniform nearest-neighbor chains. Journal of Mathematical Physics, 2013, 54, .	0.5	30
16	Finite-temperature renormalization of sine-Gordon field by variational method. Physical Review A, 1988, 37, 2165-2172.	1.0	28
17	Two-dimensional quantum Heisenberg antiferromagnet: Effective-Hamiltonian approach to the thermodynamics. Physical Review B, 1997, 56, 14456-14468.	1.1	28
18	Quantum thermodynamics of systems with anomalous dissipative coupling. Physical Review E, 2001, 64, 066124.	0.8	27

#	ARTICLE	IF	CITATIONS
19	Effective potential and finite-temperature renormalization of the ϕ^4 chain. Physical Review A, 1988, 38, 1521-1526.	1.0	26
20	Spectral shapes of Lennard-Jones chains. Physical Review B, 1993, 48, 7015-7019.	1.1	22
21	Thermodynamics of the quantum easy-plane antiferromagnet on the triangular lattice. Physical Review B, 1999, 60, 7299-7303.	1.1	21
22	Dissipation-Driven Phase Transition in Two-Dimensional Josephson Arrays. Physical Review Letters, 2005, 94, 157001.	2.9	20
23	Continuum limit of sine-Gordon and ϕ^4 chains by use of an effective potential. Physical Review A, 1988, 38, 1638-1640.	1.0	19
24	Quantum effects on the Berezinskii-Kosterlitz-Thouless transition in the ferromagnetic two-dimensional XXZ model. Physical Review B, 1995, 51, 12840-12843.	1.1	19
25	Reentrant Behavior of the Phase Stiffness in Josephson Junction Arrays. Physical Review Letters, 2003, 91, 247004.	2.9	17
26	Effective potential for quantum correlation functions. Physical Review A, 1991, 44, 2734-2737.	1.0	16
27	Dynamic correlations of the classical and quantum Toda lattices. Physical Review B, 1993, 47, 7859-7868.	1.1	16
28	Kinetic energy of solid neon by Monte Carlo with improved Trotter and finite-size extrapolation. Physical Review B, 1997, 56, 51-54.	1.1	16
29	Quantum effects on the BKT phase transition of two-dimensional Josephson arrays. Physical Review B, 2000, 61, 11289-11292.	1.1	16
30	EFFECTIVE POTENTIAL FOR TWO-BODY INTERACTIONS. International Journal of Modern Physics B, 1990, 04, 2005-2023.	1.0	15
31	Quantum renormalization of the XY model. Journal of Applied Physics, 1994, 75, 5814-5816.	1.1	14
32	Thermodynamics of dissipative quantum systems by effective potential. Physical Review E, 1997, 55, R4849-R4852.	0.8	14
33	Extracting signatures of quantum criticality in the finite-temperature behavior of many-body systems. Physical Review B, 2007, 76, .	1.1	14
34	Cuccoli, Tognetti, Vaia, and Verrucchi Reply:. Physical Review Letters, 1997, 79, 1584-1584.	2.9	13
35	Extrapolation to infinite Trotter number in path-integral Monte Carlo simulations of solid-state systems. Physical Review B, 1995, 51, 12369-12379.	1.1	12
36	Static correlations of a classical one-dimensional system. Physics Letters, Section A: General, Atomic and Solid State Physics, 1991, 160, 184-188.	0.9	11

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37	Finite-temperature ordering in two-dimensional magnets. <i>Physical Review B</i> , 2000, 62, 3771-3777.	1.1	11
38	Simulating quantum dissipation in many-body systems. <i>Europhysics Letters</i> , 2002, 58, 155-161.	0.7	11
39	Quantum thermodynamics of easy-plane ferromagnetic chains. <i>Physical Review B</i> , 1991, 44, 903-905.	1.1	10
40	Reentrant enhancement of quantum fluctuations for symmetric environmental coupling. <i>Physical Review E</i> , 2010, 81, 041110.	0.8	10
41	Efficient Quantum Information Transfer through a Uniform Channel. <i>Nanomaterials and Nanotechnology</i> , 2011, 1, 2.	1.2	10
42	Quantum Berezinskii-Kosterlitz-Thouless transition in square-lattice magnets with easy-plane anisotropy. <i>Physica D: Nonlinear Phenomena</i> , 1998, 119, 68-72.	1.3	9
43	Phase diagram of the two-dimensional quantum antiferromagnet in a magnetic field. <i>Journal of Applied Physics</i> , 2006, 99, 08H503.	1.1	9
44	Classical thermodynamics of the Heisenberg chain in a field by generalized Bethe ansatz method. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1990, 145, 154-158.	0.9	8
45	Critical behavior of the two-dimensional easy-plane ferromagnet. <i>Journal of Applied Physics</i> , 1994, 76, 6362-6364.	1.1	8
46	Quantum correction to the BKT transition for 2D easy-plane antiferromagnets. <i>Journal of Applied Physics</i> , 1996, 79, 4638.	1.1	8
47	Heisenberg antiferromagnet on the square lattice for $S > 1$. <i>Physical Review B</i> , 1998, 58, 14151-14154.	1.1	8
48	Thermodynamics of quantum dissipative many-body systems. <i>Physical Review E</i> , 1999, 60, 231-241.	0.8	8
49	Semiclassical approach to the thermodynamics of spin chains. <i>Physical Review B</i> , 2000, 62, 57-60.	1.1	8
50	Getting through to a qubit by magnetic solitons. <i>New Journal of Physics</i> , 2015, 17, 083053.	1.2	7
51	Thermodynamics and correlations of the quantum Toda lattice. <i>Physical Review B</i> , 1992, 45, 10127-10130.	1.1	6
52	Quantum gates controlled by spin chain soliton excitations. <i>Journal of Applied Physics</i> , 2014, 115, 17B302.	1.1	6
53	Newton's cradle analogue with Bose-Einstein condensates. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2014, 47, 095303.	0.6	6
54	The quantum 2-D XXZ ferromagnet. <i>Journal of Magnetism and Magnetic Materials</i> , 1995, 140-144, 1703-1704.	1.0	5

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55	Using solitons for manipulating qubits. International Journal of Quantum Information, 2014, 12, 1461013.	0.6	5
56	Persymmetric Jacobi matrices with square-integer eigenvalues and dispersionless mass-spring chains. Linear Algebra and Its Applications, 2020, 585, 164-177.	0.4	5
57	Validity of the mode-coupling theory for critical spin fluctuations in europium oxide. Physics Letters, Section A: General, Atomic and Solid State Physics, 1988, 131, 57-60.	0.9	4
58	Monte Carlo study of the classical Heisenberg antiferromagnet with easy-plane anisotropy on a triangular lattice. Journal of Applied Physics, 1999, 85, 6073-6075.	1.1	4
59	Quantum fluctuations in one-dimensional arrays of condensates. Physical Review A, 2001, 64, .	1.0	4
60	Quantum two-dimensional Heisenberg antiferromagnet: Bridging the gap between field-theoretical and semiclassical approaches. Physical Review B, 2003, 68, .	1.1	4
61	Almost-dispersionless pulse transport in long quasiuniform spring-mass chains: A different kind of Newton's cradle. Physical Review E, 2018, 97, 043001.	0.8	4
62	The spectral shape of nonlinear chains: validity of perturbative and moment approaches. Physics Letters, Section A: General, Atomic and Solid State Physics, 1994, 196, 285-289.	0.9	3
63	Quantum effects on double-Morse hydrogen-bonded chains. Journal of Physics Condensed Matter, 1995, 7, L625-L630.	0.7	3
64	Thermodynamics of two-dimensionalXXZeasy-plane quantum Heisenberg magnets. Journal of Applied Physics, 1997, 81, 4137-4139.	1.1	3
65	Quantum effects on the localization of a particle in a double-well potential. Physica D: Nonlinear Phenomena, 1998, 113, 374-378.	1.3	3
66	Path integral Monte Carlo for dissipative many-body systems. Physica Status Solidi (B): Basic Research, 2003, 237, 23-38.	0.7	3
67	Anisotropy and Ising-type transition of the S=5/2 two-dimensional Heisenberg antiferromagnet Mn-formate di-Urea. Journal of Applied Physics, 2003, 93, 7637-7639.	1.1	3
68	Quantum Monte Carlo simulation of two-dimensional S=1/2 antiferromagnets with very weak easy-plane anisotropy. Journal of Applied Physics, 2003, 93, 7640-7642.	1.1	3
69	Berezinskii-Kosterlitz-Thouless Transition in Josephson Junction Arrays. , 2004, , 203-216.		3
70	Effective potential for the quantum thermodynamics of integrable and non integrable one-dimensional systems. Physica Scripta, 1989, 40, 451-453.	1.2	2
71	Effective Hamiltonian with holomorphic variables. Physica A: Statistical Mechanics and Its Applications, 1999, 271, 387-404.	1.2	2
72	The quantum Heisenberg antiferromagnet on the square lattice. Journal of Applied Physics, 1999, 85, 6079-6081.	1.1	2

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73	The two-dimensional quantum Heisenberg antiferromagnet with Ising-like anisotropy. Brazilian Journal of Physics, 2000, 30, 697.	0.7	2
74	Reentrant spin-flop transition in nanomagnets. Physical Review B, 2014, 90, .	1.1	2
75	Dispersionless pulse transport in mass-spring chains: All possible perfect Newton's cradles. Physical Review E, 2020, 102, 023005.	0.8	2
76	Physics and Derivatives: <i>Effective-Potential Path-Integral Approximations of Arrow-Debreu Densities</i> . Journal of Derivatives, 2020, 28, 8-25.	0.1	2
77	Quantum thermodynamics of easy-plane ferromagnetic chains. Journal of Magnetism and Magnetic Materials, 1992, 104-107, 785-787.	1.0	1
78	Thermodynamics and correlations of the easy-plane ferromagnet CsNiF ₃ . Journal of Applied Physics, 1993, 73, 6998-7000.	1.1	1
79	The spectral shape of nonlinear chains: validity of perturbative and moment approaches. Physics Letters, Section A: General, Atomic and Solid State Physics, 1994, 196, 285-289.	0.9	1
80	Phase transitions in the quantum easy-plane antiferromagnet on the triangular lattice. Journal of Applied Physics, 2000, 87, 7037-7039.	1.1	1
81	Transition temperature of three-dimensional quantum Heisenberg ferro- and antiferromagnets. Journal of Magnetism and Magnetic Materials, 2001, 226-230, 566-568.	1.0	1
82	Signatures of XY behavior in 2D weakly anisotropic antiferromagnets. Journal of Magnetism and Magnetic Materials, 2004, 272-276, E651-E652.	1.0	1
83	Classical Ising chain in transverse field. Journal of Magnetism and Magnetic Materials, 2007, 310, e477-e479.	1.0	1
84	Exotic vortex effect on the alternating order around impurities in two-dimensional antiferromagnets. Journal of Applied Physics, 2009, 105, 07E104.	1.1	1
85	Commentary on "Force-field functor theory: classical force-fields which reproduce equilibrium quantum distributions". Frontiers in Chemistry, 2013, 1, 34.	1.8	1
86	Single-qubit remote manipulation by magnetic solitons. Journal of Magnetism and Magnetic Materials, 2016, 400, 149-153.	1.0	1
87	Quantum correlations between distant qubits conveyed by large- S spin chains. Physical Review B, 2017, 96, .	1.1	1
88	Comment on "Magnetic structure and magnetization of z -axis helical Heisenberg antiferromagnets with XY anisotropy in high magnetic fields transverse to the helix axis at zero temperature". Physical Review B, 2020, 101, .	1.1	1
89	Correlation length of the isotropic quantum Heisenberg antiferromagnet. Journal of Applied Physics, 1997, 81, 4224-4226.	1.1	0
90	Reconciling field-theoretical and semiclassical approaches to quantum 2D antiferromagnets. Journal of Magnetism and Magnetic Materials, 2004, 272-276, 892-893.	1.0	0

#	ARTICLE	IF	CITATIONS
91	Spin-lattice coupling as environmental effect. Journal of Physics: Conference Series, 2010, 200, 022069.	0.3	0
92	Vortex contribution to the defect-induced alternating magnetization in 2D antiferromagnets. Journal of Physics: Conference Series, 2010, 200, 022003.	0.3	0
93	Quantum effects in nanosystems: Good reasons to use phase-space Weyl symbols. Physical Review B, 2016, 94, .	1.1	0