

# Ruggero Vaia

## List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

93  
papers

1,242  
citations

20  
h-index

31  
g-index

96  
ext. papers

1,328  
ext. citations

2.9  
avg, IF

3.88  
L-index

#	Paper	IF	Citations
93	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. <i>Physical Review B</i> , <b>2020</b> , 101,	3.3	1
92	Persymmetric Jacobi matrices with square-integer eigenvalues and dispersionless mass-spring chains. <i>Linear Algebra and Its Applications</i> , <b>2020</b> , 585, 164-177	0.9	3
91	Dispersionless pulse transport in mass-spring chains: All possible perfect Newton's cradles. <i>Physical Review E</i> , <b>2020</b> , 102, 023005	2.4	2
90	Almost-dispersionless pulse transport in long quasiuniform spring-mass chains: A different kind of Newton's cradle. <i>Physical Review E</i> , <b>2018</b> , 97, 043001	2.4	4
89	Quantum correlations between distant qubits conveyed by large-S spin chains. <i>Physical Review B</i> , <b>2017</b> , 96,	3.3	1
88	Single-qubit remote manipulation by magnetic solitons. <i>Journal of Magnetism and Magnetic Materials</i> , <b>2016</b> , 400, 149-153	2.8	0
87	Getting through to a qubit by magnetic solitons. <i>New Journal of Physics</i> , <b>2015</b> , 17, 083053	2.9	6
86	Newton's cradle analogue with Bose-Einstein condensates. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , <b>2014</b> , 47, 095303	1.3	4
85	Using solitons for manipulating qubits. <i>International Journal of Quantum Information</i> , <b>2014</b> , 12, 1461013	0.8	5
84	Quantum gates controlled by spin chain soliton excitations. <i>Journal of Applied Physics</i> , <b>2014</b> , 115, 17B302	2.5	6
83	Reentrant spin-flop transition in nanomagnets. <i>Physical Review B</i> , <b>2014</b> , 90,	3.3	1
82	Spectral problem for quasi-uniform nearest-neighbor chains. <i>Journal of Mathematical Physics</i> , <b>2013</b> , 54, 043501	1.2	21
81	Commentary on "Force-field functor theory: classical force-fields which reproduce equilibrium quantum distributions". <i>Frontiers in Chemistry</i> , <b>2013</b> , 1, 34	5	1
80	Efficient Quantum Information Transfer through a Uniform Channel. <i>Nanomaterials and Nanotechnology</i> , <b>2011</b> , 1, 2	2.9	2
79	Long quantum channels for high-quality entanglement transfer. <i>New Journal of Physics</i> , <b>2011</b> , 13, 123006	1.9	67
78	Reentrant enhancement of quantum fluctuations for symmetric environmental coupling. <i>Physical Review E</i> , <b>2010</b> , 81, 041110	2.4	8
77	Vortex contribution to the defect-induced alternating magnetization in 2D antiferromagnets. <i>Journal of Physics: Conference Series</i> , <b>2010</b> , 200, 022003	0.3	

76	Spin-lattice coupling as environmental effect. <i>Journal of Physics: Conference Series</i> , <b>2010</b> , 200, 022069	0.3	
75	Exotic vortex effect on the alternating order around impurities in two-dimensional antiferromagnets. <i>Journal of Applied Physics</i> , <b>2009</b> , 105, 07E104	2.5	1
74	Classical Ising chain in transverse field. <i>Journal of Magnetism and Magnetic Materials</i> , <b>2007</b> , 310, e477-e478	0	
73	Extracting signatures of quantum criticality in the finite-temperature behavior of many-body systems. <i>Physical Review B</i> , <b>2007</b> , 76,	3.3	11
72	Phase diagram of the two-dimensional quantum antiferromagnet in a magnetic field. <i>Journal of Applied Physics</i> , <b>2006</b> , 99, 08H503	2.5	7
71	Phase diagram of dissipative two-dimensional Josephson junction arrays <b>2006</b> , 254-262		
70	Dissipation-driven phase transition in two-dimensional Josephson arrays. <i>Physical Review Letters</i> , <b>2005</b> , 94, 157001	7.4	14
69	Reconciling field-theoretical and semiclassical approaches to quantum 2D antiferromagnets. <i>Journal of Magnetism and Magnetic Materials</i> , <b>2004</b> , 272-276, 892-893	2.8	
68	Signatures of XY behavior in 2D weakly anisotropic antiferromagnets. <i>Journal of Magnetism and Magnetic Materials</i> , <b>2004</b> , 272-276, E651-E652	2.8	1
67	Berezinskii-Kosterlitz-Thouless Transition in Josephson Junction Arrays <b>2004</b> , 203-216		3
66	Path integral Monte Carlo for dissipative many-body systems. <i>Physica Status Solidi (B): Basic Research</i> , <b>2003</b> , 237, 23-38	1.3	3
65	Quantum Monte Carlo study of S=12 weakly anisotropic antiferromagnets on the square lattice. <i>Physical Review B</i> , <b>2003</b> , 67,	3.3	96
64	Detection of XY behavior in weakly anisotropic quantum antiferromagnets on the square lattice. <i>Physical Review Letters</i> , <b>2003</b> , 90, 167205	7.4	40
63	Anisotropy and Ising-type transition of the S=5/2 two-dimensional Heisenberg antiferromagnet Mn-formate di-Urea. <i>Journal of Applied Physics</i> , <b>2003</b> , 93, 7637-7639	2.5	2
62	Field-induced XY behavior in the S=12 antiferromagnet on the square lattice. <i>Physical Review B</i> , <b>2003</b> , 68,	3.3	36
61	Quantum two-dimensional Heisenberg antiferromagnet: Bridging the gap between field-theoretical and semiclassical approaches. <i>Physical Review B</i> , <b>2003</b> , 68,	3.3	3
60	Reentrant behavior of the phase stiffness in Josephson junction arrays. <i>Physical Review Letters</i> , <b>2003</b> , 91, 247004	7.4	15
59	Quantum Monte Carlo simulation of two-dimensional S=1/2 antiferromagnets with very weak easy-plane anisotropy. <i>Journal of Applied Physics</i> , <b>2003</b> , 93, 7640-7642	2.5	3

58	Simulating quantum dissipation in many-body systems. <i>Europhysics Letters</i> , <b>2002</b> , 58, 155-161	1.6	9
57	Transition temperature of three-dimensional quantum Heisenberg ferro- and antiferromagnets. <i>Journal of Magnetism and Magnetic Materials</i> , <b>2001</b> , 226-230, 566-568	2.8	1
56	Quantum fluctuations in one-dimensional arrays of condensates. <i>Physical Review A</i> , <b>2001</b> , 64,	2.6	3
55	Quantum thermodynamics of systems with anomalous dissipative coupling. <i>Physical Review E</i> , <b>2001</b> , 64, 066124	2.4	22
54	Finite-temperature ordering in two-dimensional magnets. <i>Physical Review B</i> , <b>2000</b> , 62, 3771-3777	3.3	10
53	Semiclassical approach to the thermodynamics of spin chains. <i>Physical Review B</i> , <b>2000</b> , 62, 57-60	3.3	8
52	Quantum effects on the BKT phase transition of two-dimensional Josephson arrays. <i>Physical Review B</i> , <b>2000</b> , 61, 11289-11292	3.3	13
51	Phase transitions in the quantum easy-plane antiferromagnet on the triangular lattice. <i>Journal of Applied Physics</i> , <b>2000</b> , 87, 7037-7039	2.5	1
50	Thermodynamics of quantum dissipative many-body systems. <i>Physical Review E</i> , <b>1999</b> , 60, 231-41	2.4	8
49	Thermodynamics of the quantum easy-plane antiferromagnet on the triangular lattice. <i>Physical Review B</i> , <b>1999</b> , 60, 7299-7303	3.3	18
48	Effective Hamiltonian with holomorphic variables. <i>Physica A: Statistical Mechanics and Its Applications</i> , <b>1999</b> , 271, 387-404	3.3	2
47	The quantum Heisenberg antiferromagnet on the square lattice. <i>Journal of Applied Physics</i> , <b>1999</b> , 85, 6079-6081	2.5	2
46	Monte Carlo study of the classical Heisenberg antiferromagnet with easy-plane anisotropy on a triangular lattice. <i>Journal of Applied Physics</i> , <b>1999</b> , 85, 6073-6075	2.5	4
45	Quantum Berezinskii-Kosterlitz-Thouless transition in square-lattice magnets with easy-plane anisotropy. <i>Physica D: Nonlinear Phenomena</i> , <b>1998</b> , 119, 68-72	3.3	7
44	Quantum effects on the localization of a particle in a double-well potential. <i>Physica D: Nonlinear Phenomena</i> , <b>1998</b> , 113, 374-378	3.3	2
43	Phase transitions induced by easy-plane anisotropy in the classical Heisenberg antiferromagnet on a triangular lattice: A Monte Carlo simulation. <i>Physical Review B</i> , <b>1998</b> , 58, 273-281	3.3	44
42	Heisenberg antiferromagnet on the square lattice for $S \gg 1$ . <i>Physical Review B</i> , <b>1998</b> , 58, 14151-14154	3.3	8
41	Two-dimensional quantum Heisenberg antiferromagnet: Effective-Hamiltonian approach to the thermodynamics. <i>Physical Review B</i> , <b>1997</b> , 56, 14456-14468	3.3	27

40	Cuccoli, Tognetti, Vaia, and Verrucchi Reply: <i>Physical Review Letters</i> , <b>1997</b> , 79, 1584-1584	7.4	13
39	Thermodynamics of dissipative quantum systems by effective potential. <i>Physical Review E</i> , <b>1997</b> , 55, R4849-R4852	2.4	13
38	Kinetic energy of solid neon by Monte Carlo with improved Trotter and finite-size extrapolation. <i>Physical Review B</i> , <b>1997</b> , 56, 51-54	3.3	16
37	Thermodynamics of two-dimensional XXZ easy-plane quantum Heisenberg magnets. <i>Journal of Applied Physics</i> , <b>1997</b> , 81, 4137-4139	2.5	3
36	Correlation length of the isotropic quantum Heisenberg antiferromagnet. <i>Journal of Applied Physics</i> , <b>1997</b> , 81, 4224-4226	2.5	
35	Temperature and Spin Dependent Correlation Length of the Quantum Heisenberg Antiferromagnet on the Square Lattice. <i>Physical Review Letters</i> , <b>1996</b> , 77, 3439-3442	7.4	46
34	Quantum correction to the BKT transition for 2D easy-plane antiferromagnets. <i>Journal of Applied Physics</i> , <b>1996</b> , 79, 4638	2.5	8
33	The quantum 2-D XXZ ferromagnet. <i>Journal of Magnetism and Magnetic Materials</i> , <b>1995</b> , 140-144, 1703-1704		5
32	Quantum effects on the Berezinskii-Kosterlitz-Thouless transition in the ferromagnetic two-dimensional XXZ model. <i>Physical Review B</i> , <b>1995</b> , 51, 12840-12843	3.3	16
31	Extrapolation to infinite Trotter number in path-integral Monte Carlo simulations of solid-state systems. <i>Physical Review B</i> , <b>1995</b> , 51, 12369-12379	3.3	11
30	Two-dimensional XXZ model on a square lattice: A Monte Carlo simulation. <i>Physical Review B</i> , <b>1995</b> , 52, 10221-10231	3.3	67
29	Quantum effects on double-Morse hydrogen-bonded chains. <i>Journal of Physics Condensed Matter</i> , <b>1995</b> , 7, L625-L630	1.8	3
28	The effective potential and effective Hamiltonian in quantum statistical mechanics. <i>Journal of Physics Condensed Matter</i> , <b>1995</b> , 7, 7891-7938	1.8	70
27	Critical behavior of the two-dimensional easy-plane ferromagnet. <i>Journal of Applied Physics</i> , <b>1994</b> , 76, 6362-6364	2.5	6
26	Quantum renormalization of the XY model. <i>Journal of Applied Physics</i> , <b>1994</b> , 75, 5814-5816	2.5	14
25	The spectral shape of nonlinear chains: validity of perturbative and moment approaches. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , <b>1994</b> , 196, 285-289	2.3	1
24	The spectral shape of nonlinear chains: validity of perturbative and moment approaches. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , <b>1994</b> , 196, 285-289	2.3	3
23	Monte Carlo computations of the quantum kinetic energy of rare-gas solids. <i>Physical Review B</i> , <b>1993</b> , 47, 14923-14931	3.3	32

22	Dynamic correlations of the classical and quantum Toda lattices. <i>Physical Review B</i> , <b>1993</b> , 47, 7859-7868	3.3	15
21	Spectral shapes of Lennard-Jones chains. <i>Physical Review B</i> , <b>1993</b> , 48, 7015-7019	3.3	21
20	Thermodynamics and correlations of the easy-plane ferromagnet CsNiF <sub>3</sub> . <i>Journal of Applied Physics</i> , <b>1993</b> , 73, 6998-7000	2.5	1
19	Quantum thermodynamics of the easy-plane ferromagnetic chain. <i>Physical Review B</i> , <b>1992</b> , 46, 11601-11616	3.6	29
18	Frequency moments and spectral shape of quantum chains. <i>Physical Review B</i> , <b>1992</b> , 46, 8839-8857	3.3	31
17	Thermodynamics and correlations of the quantum Toda lattice. <i>Physical Review B</i> , <b>1992</b> , 45, 10127-10130	3.3	6
16	Quantum thermodynamics of solids by means of an effective potential. <i>Physical Review B</i> , <b>1992</b> , 45, 2088-2096	3.3	44
15	Quantum thermodynamics in classical phase space. <i>Physical Review A</i> , <b>1992</b> , 45, 8418-8429	2.6	43
14	Quantum thermodynamics of easy-plane ferromagnetic chains. <i>Journal of Magnetism and Magnetic Materials</i> , <b>1992</b> , 104-107, 785-787	2.8	1
13	Static correlations of a classical one-dimensional system. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , <b>1991</b> , 160, 184-188	2.3	11
12	Quantum thermodynamics of easy-plane ferromagnetic chains. <i>Physical Review B</i> , <b>1991</b> , 44, 903-905	3.3	9
11	Effective potential for quantum correlation functions. <i>Physical Review A</i> , <b>1991</b> , 44, 2734-2737	2.6	16
10	Thermodynamics of quantum spin chains <b>1991</b> , 36-43		
9	Quantum Thermodynamics of a Anharmonic N-N Chain. <i>NATO ASI Series Series B: Physics</i> , <b>1991</b> , 333-337		
8	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> , <b>1990</b> , 145, 154-158	2.3	7
7	Thermodynamic properties of a quantum chain with nearest-neighbor anharmonic interactions. <i>Physical Review B</i> , <b>1990</b> , 41, 9588-9591	3.3	34
6	EFFECTIVE POTENTIAL FOR TWO-BODY INTERACTIONS. <i>International Journal of Modern Physics B</i> , <b>1990</b> , 04, 2005-2023	1.1	13
5	Effective potential for the quantum thermodynamics of integrable and non integrable one-dimensional systems. <i>Physica Scripta</i> , <b>1989</b> , 40, 451-453	2.6	2

4	Validity of the mode-coupling theory for critical spin fluctuations in europium oxide. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , <b>1988</b> , 131, 57-60	2.3	4
3	Finite-temperature renormalization of sine-Gordon field by variational method. <i>Physical Review A</i> , <b>1988</b> , 37, 2165-2172	2.6	27
2	Effective potential and finite-temperature renormalization of the phi4 chain. <i>Physical Review A</i> , <b>1988</b> , 38, 1521-1526	2.6	26
1	Continuum limit of sine-Gordon and phi4 chains by use of an effective potential. <i>Physical Review A</i> , <b>1988</b> , 38, 1638-1640	2.6	18