

# Sylvain Capponi

## 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.

105  
papers

2,463  
citations

26  
h-index

45  
g-index

110  
ext. papers

2,820  
ext. citations

3.6  
avg, IF

5.08  
L-index

#	Paper	IF	Citations
105	Ground-state properties of the one-dimensional Hubbard model with pairing potential. <i>Physica B: Condensed Matter</i> , <b>2021</b> , 604, 412665	2.8	2
104	Symmetry-protected topological phases in a two-leg SU(N) spin ladder with unequal spins. <i>Physical Review B</i> , <b>2020</b> , 101,	3.3	2
103	Quantum spin liquid phases in the bilinear-biquadratic two-SU(4)-fermion Hamiltonian on the square lattice. <i>Physical Review B</i> , <b>2020</b> , 101,	3.3	1
102	SU(3) <sub>1</sub> Chiral Spin Liquid on the Square Lattice: A View from Symmetric Projected Entangled Pair States. <i>Physical Review Letters</i> , <b>2020</b> , 125, 017201	7.4	5
101	Quantum half-orphans in kagome antiferromagnets. <i>Physical Review Research</i> , <b>2020</b> , 2,	3.9	1
100	NMR relaxation in the spin-1 Heisenberg chain. <i>Physical Review B</i> , <b>2019</b> , 100,	3.3	9
99	SU(4) topological resonating valence bond spin liquid on the square lattice. <i>Physical Review B</i> , <b>2019</b> , 99,	3.3	4
98	Critical colored-RVB states in the frustrated quantum Heisenberg model on the square lattice. <i>SciPost Physics</i> , <b>2019</b> , 7,	6.1	5
97	Haldane phases with ultracold fermionic atoms in double-well optical lattices. <i>Physical Review B</i> , <b>2019</b> , 99,	3.3	3
96	Dynamical properties of the S=12 random Heisenberg chain. <i>Physical Review B</i> , <b>2018</b> , 97,	3.3	14
95	Discrete lattice symmetry breaking in a two-dimensional frustrated spin-1 Heisenberg model. <i>Physical Review B</i> , <b>2018</b> , 98,	3.3	3
94	Unified phase diagram of antiferromagnetic SU(N) spin ladders. <i>Physical Review B</i> , <b>2018</b> , 98,	3.3	14
93	Non-Abelian chiral spin liquid in a quantum antiferromagnet revealed by an iPEPS study. <i>Physical Review B</i> , <b>2018</b> , 98,	3.3	22
92	Detection of a Disorder-Induced Bose-Einstein Condensate in a Quantum Spin Material at High Magnetic Fields. <i>Physical Review Letters</i> , <b>2018</b> , 121, 177202	7.4	3
91	Dynamical response and dimensional crossover for spatially anisotropic antiferromagnets. <i>Physical Review B</i> , <b>2018</b> , 98,	3.3	5
90	Nuclear magnetic resonance study of the magnetic-field-induced ordered phase in the NiCl <sub>2</sub> SC(NH <sub>2</sub> ) <sub>2</sub> compound. <i>Physical Review B</i> , <b>2017</b> , 95,	3.3	14
89	Disorder-Induced Revival of the Bose-Einstein Condensation in Ni(Cl <sub>1-x</sub> Br <sub>x</sub> ) <sub>2</sub> -4SC(NH <sub>2</sub> ) <sub>2</sub> at High Magnetic Fields. <i>Physical Review Letters</i> , <b>2017</b> , 118, 067204	7.4	7

88	Numerical study of magnetization plateaus in the spin-12 Heisenberg antiferromagnet on the checkerboard lattice. <i>Physical Review B</i> , <b>2017</b> , 95,	3.3	7
87	Competing Bose-glass physics with disorder-induced Bose-Einstein condensation in the doped S=1 antiferromagnet Ni(Cl <sub>1-x</sub> Br <sub>x</sub> ) <sub>2</sub> SC(NH <sub>2</sub> ) <sub>2</sub> at high magnetic fields. <i>Physical Review B</i> , <b>2017</b> , 96,	3.3	3
86	Weak- versus strong-disorder superfluid-Bose glass transition in one dimension. <i>Physical Review B</i> , <b>2017</b> , 96,	3.3	14
85	Nuclear Magnetic Resonance Reveals Disordered Level-Crossing Physics in the Bose-Glass Regime of the Br-Doped Ni(Cl <sub>1-x</sub> Br <sub>x</sub> ) <sub>2</sub> SC(NH <sub>2</sub> ) <sub>2</sub> Compound at a High Magnetic Field. <i>Physical Review Letters</i> , <b>2017</b> , 118, 067203	7.4	8
84	Phase diagram of interacting spinless fermions on the honeycomb lattice. <i>Journal of Physics Condensed Matter</i> , <b>2017</b> , 29, 043002	1.8	17
83	Nearly Deconfined Spinon Excitations in the Square-Lattice Spin-1/2 Heisenberg Antiferromagnet. <i>Physical Review X</i> , <b>2017</b> , 7,	9.1	48
82	Staircase of crystal phases of hard-core bosons on the kagome lattice. <i>Physical Review B</i> , <b>2016</b> , 94,	3.3	8
81	Phases of one-dimensional SU(N) cold atomic Fermi gases from molecular Luttinger liquids to topological phases. <i>Annals of Physics</i> , <b>2016</b> , 367, 50-95	2.5	54
80	Temperature dependence of the NMR relaxation rate 1/T <sub>1</sub> for quantum spin chains. <i>Physical Review B</i> , <b>2016</b> , 94,	3.3	17
79	Dimensional modulation of spontaneous magnetic order in quasi-two-dimensional quantum antiferromagnets. <i>Physical Review B</i> , <b>2016</b> , 94,	3.3	8
78	A generalized perspective on non-perturbative linked-cluster expansions. <i>Europhysics Letters</i> , <b>2015</b> , 110, 20006	1.6	9
77	Real space imaging of spin polarons in Zn-doped SrCu <sub>2</sub> (BO <sub>3</sub> ) <sub>2</sub> . <i>Physical Review Letters</i> , <b>2015</b> , 114, 056402	7.4	2
76	Phase diagrams of one-dimensional half-filled two-orbital SU(N) cold fermion systems. <i>Physical Review B</i> , <b>2015</b> , 91,	3.3	23
75	Selection of factorizable ground state in a frustrated spin tube: Order by disorder and hidden ferromagnetism. <i>Physical Review B</i> , <b>2015</b> , 91,	3.3	9
74	Competing superconducting instabilities in the one-dimensional p-band degenerate cold fermionic system. <i>Physical Review B</i> , <b>2015</b> , 92,	3.3	2
73	Phase diagram of interacting spinless fermions on the honeycomb lattice: A comprehensive exact diagonalization study. <i>Physical Review B</i> , <b>2015</b> , 92,	3.3	46
72	Engineering SU(2) invariant spin models to mimic quantum dimer physics on the square lattice. <i>Physical Review B</i> , <b>2015</b> , 92,	3.3	3
71	Magnetization plateaus of an easy-axis kagome antiferromagnet with extended interactions. <i>Physical Review B</i> , <b>2015</b> , 92,	3.3	7

70	Baxter-Wu model in a transverse magnetic field. <i>Physical Review E</i> , <b>2014</b> , 89, 062136	2.4	7
69	Numerical study of magnetization plateaus in the spin-12 kagome Heisenberg antiferromagnet. <i>Physical Review B</i> , <b>2013</b> , 88,	3.3	70
68	Symmetry-protected topological phases of alkaline-earth cold fermionic atoms in one dimension. <i>Europhysics Letters</i> , <b>2013</b> , 102, 37008	1.6	51
67	Quantum phase transitions in multileg spin ladders with ring exchange. <i>Physical Review B</i> , <b>2013</b> , 88,	3.3	18
66	p6 chiral resonating valence bonds in the kagome antiferromagnet. <i>Physical Review B</i> , <b>2013</b> , 87,	3.3	27
65	Combined analytical and numerical approach to magnetization plateaux in one-dimensional spin tube antiferromagnets. <i>Physical Review B</i> , <b>2012</b> , 85,	3.3	7
64	Effective spin couplings in the Mott insulator of the honeycomb lattice Hubbard model. <i>New Journal of Physics</i> , <b>2012</b> , 14, 115027	2.9	17
63	Semiclassical approach to competing orders in a two-leg spin ladder with ring exchange. <i>Physical Review B</i> , <b>2012</b> , 86,	3.3	7
62	Comment on Topological quantum phase transitions of attractive spinless fermions in a honeycomb lattice by Poletti D. et al.. <i>Europhysics Letters</i> , <b>2012</b> , 98, 27005	1.6	7
61	ENTANGLEMENT OF QUANTUM SPIN SYSTEMS: A VALENCE-BOND APPROACH. <i>Modern Physics Letters B</i> , <b>2011</b> , 25, 917-928	1.6	2
60	Combined analytical and numerical approach to study magnetization plateaux in doped quasi-one-dimensional antiferromagnets. <i>Physical Review B</i> , <b>2011</b> , 84,	3.3	11
59	Quantum criticality in the SO(5) bilinear-biquadratic Heisenberg chain. <i>Physical Review B</i> , <b>2011</b> , 83,	3.3	17
58	Phase diagram of a frustrated quantum antiferromagnet on the honeycomb lattice: Magnetic order versus valence-bond crystal formation. <i>Physical Review B</i> , <b>2011</b> , 84,	3.3	140
57	Competing orders in one-dimensional half-filled multicomponent fermionic cold atoms: The Haldane-charge conjecture. <i>Physical Review B</i> , <b>2011</b> , 84,	3.3	28
56	PHASE DIAGRAM OF ONE-DIMENSIONAL ALKALINE-EARTH COLD FERMIONIC ATOMS. <i>Modern Physics Letters B</i> , <b>2011</b> , 25, 955-962	1.6	10
55	Asymmetric spin-12 two-leg ladders: Analytical studies supported by exact diagonalization, DMRG, and Monte Carlo simulations. <i>Physical Review B</i> , <b>2010</b> , 82,	3.3	9
54	Valence-bond entanglement entropy of frustrated spin chains. <i>Physical Review B</i> , <b>2010</b> , 82,	3.3	16
53	Quantum phase transitions in three-leg spin tubes. <i>Physical Review B</i> , <b>2010</b> , 82,	3.3	20

52	Haldane charge conjecture in one-dimensional multicomponent fermionic cold atoms. <i>Physical Review B</i> , <b>2010</b> , 81,	3.3	38
51	Quantum critical scaling of fidelity susceptibility. <i>Physical Review B</i> , <b>2010</b> , 81,	3.3	113
50	Competing orders in the generalized Hund chain model at half filling. <i>Physical Review B</i> , <b>2010</b> , 82,	3.3	19
49	Theory of the Raman spectra of the Shastry-Sutherland antiferromagnet SrCu <sub>2</sub> (BO <sub>3</sub> ) <sub>2</sub> doped with nonmagnetic impurities. <i>Physical Review B</i> , <b>2009</b> , 80,	3.3	4
48	SU(N) Heisenberg model on the square lattice: A continuous-N quantum Monte Carlo study. <i>Physical Review B</i> , <b>2009</b> , 80,	3.3	54
47	Quantum Monte Carlo simulations of fidelity at magnetic quantum phase transitions. <i>Physical Review Letters</i> , <b>2009</b> , 103, 170501	7.4	91
46	Spin 3/2 fermions with attractive interactions in a one-dimensional optical lattice: phase diagrams, entanglement entropy, and the effect of the trap. <i>European Physical Journal B</i> , <b>2009</b> , 68, 293-308	1.2	54
45	Three-component Fermi gas in a one-dimensional optical lattice. <i>Physical Review A</i> , <b>2009</b> , 80,	2.6	30
44	Effective theory of magnetization plateaux in the Shastry-Sutherland lattice. <i>Physical Review Letters</i> , <b>2008</b> , 101, 227201	7.4	40
43	Spin gap and string order parameter in the ferromagnetic spiral staircase heisenberg ladder: a quantum Monte Carlo study. <i>Physical Review Letters</i> , <b>2008</b> , 100, 017202	7.4	7
42	Thermodynamics of the spin Luttinger liquid in a model ladder material. <i>Physical Review Letters</i> , <b>2008</b> , 101, 247202	7.4	129
41	TRIONIC AND QUARTETTING PHASES IN ONE-DIMENSIONAL MULTICOMPONENT ULTRACOLD FERMIONS. <i>International Journal of Modern Physics E</i> , <b>2008</b> , 17, 2110-2117	0.7	6
40	Dynamical dimer correlations at bipartite and non-bipartite Rokhsar-Kivelson points. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , <b>2008</b> , 2008, P01010	1.9	13
39	Molecular superfluid phase in systems of one-dimensional multicomponent fermionic cold atoms. <i>Physical Review A</i> , <b>2008</b> , 77,	2.6	78
38	A unifying approach to unconventional orders in frustrated spin systems. <i>Journal of Magnetism and Magnetic Materials</i> , <b>2007</b> , 310, 1355-1356	2.8	
37	Valence bond state in the delafossite YCuO <sub>2.5</sub> . <i>Journal of Physics Condensed Matter</i> , <b>2007</b> , 19, 145233	1.8	2
36	Confinement versus deconfinement of Cooper pairs in one-dimensional spin-3/2 fermionic cold atoms. <i>Physical Review B</i> , <b>2007</b> , 75,	3.3	44
35	Spin-nematic phases in models of correlated electron systems: A numerical study. <i>Physical Review B</i> , <b>2007</b> , 75,	3.3	2

34	Valence bond entanglement entropy. <i>Physical Review Letters</i> , <b>2007</b> , 99, 117204	7.4	51
33	Thermodynamic properties of the coupled dimer system $\text{Cu}_2(\text{C}_5\text{H}_{12}\text{N}_2)_2\text{Cl}_4$ . <i>Physical Review B</i> , <b>2007</b> , 75,	3.3	8
32	Breathers and Raman scattering in a two-leg ladder with staggered Dzyaloshinskii-Moriya interaction. <i>Physical Review B</i> , <b>2007</b> , 76,	3.3	11
31	Contractor-renormalization approach to frustrated magnets in a magnetic field. <i>Physical Review B</i> , <b>2007</b> , 76,	3.3	13
30	Effective Hamiltonian Approach for Strongly Correlated Systems. <i>Theoretical Chemistry Accounts</i> , <b>2006</b> , 116, 524-534	1.9	4
29	Zeeman effect in superconducting two-leg ladders: irrational magnetization plateaus and exceeding the Pauli limit. <i>Physical Review Letters</i> , <b>2006</b> , 97, 087207	7.4	23
28	Modeling bond-order wave instabilities in doped frustrated antiferromagnets: Valence bond solids at fractional filling. <i>Physical Review B</i> , <b>2006</b> , 74,	3.3	18
27	Bond-order-modulated staggered-flux phase of the tJ model on a square lattice. <i>Physical Review B</i> , <b>2006</b> , 74,	3.3	9
26	Parity law of the singlet-triplet gap in graphitic ribbons. <i>European Physical Journal B</i> , <b>2006</b> , 51, 517-522	1.2	5
25	Doped two-leg ladder with ring exchange: Exact diagonalization and density matrix renormalization group computations. <i>Physical Review B</i> , <b>2005</b> , 72,	3.3	10
24	Resonant magnetic mode in superconducting two-leg ladders. <i>Physical Review B</i> , <b>2004</b> , 69,	3.3	19
23	Current carrying ground state in a bilayer model of strongly correlated systems. <i>Physical Review B</i> , <b>2004</b> , 70,	3.3	22
22	Numerical contractor renormalization method for quantum spin models. <i>Physical Review B</i> , <b>2004</b> , 70,	3.3	54
21	Global phase diagram of the high- $T_c$ cuprates. <i>Physical Review B</i> , <b>2004</b> , 70,	3.3	22
20	Superconducting gap for a two-leg t-J ladder. <i>Physical Review Letters</i> , <b>2003</b> , 91, 137203	7.4	24
19	Antiholons in one-dimensional t-J models. <i>Physical Review Letters</i> , <b>2003</b> , 90, 216401	7.4	17
18	Charge and spin inhomogeneous phases in the ferromagnetic Kondo lattice model. <i>Physical Review B</i> , <b>2002</b> , 65,	3.3	25
17	Antiferromagnetism and hole pair checkerboard in the vortex state of high $T(c)$ superconductors. <i>Physical Review Letters</i> , <b>2002</b> , 89, 137004	7.4	83

16	Charge density correlations in $t\bar{t}$ ladders investigated by the contractor-renormalization method. <i>Physical Review B</i> , <b>2002</b> , 66,	3-3	27
15	Single Hole Dynamics in Correlated Insulators <b>2002</b> , 145-156		
14	Truncated Lanczos method: Application to hole-doped spin ladders. <i>Physical Review B</i> , <b>2001</b> , 63,	3-3	3
13	Low-frequency current fluctuations in doped ladders. <i>Physical Review B</i> , <b>2001</b> , 65,	3-3	12
12	Finite size scaling of the spin stiffness of the antiferromagnetic $S = \frac{1}{2}$ XXZ chain. <i>European Physical Journal B</i> , <b>2001</b> , 24, 77-84	1.2	21
11	Single hole dynamics in the $t\bar{t}$ model on two- and three-leg ladders. <i>Physical Review B</i> , <b>2001</b> , 63,	3-3	13
10	Spin and charge dynamics of the ferromagnetic and antiferromagnetic two-dimensional half-filled Kondo lattice model. <i>Physical Review B</i> , <b>2001</b> , 63,	3-3	83
9	Effects of long-range electronic interactions on a one-dimensional electron system. <i>Physical Review B</i> , <b>2000</b> , 61, 13410-13417	3-3	33
8	Ferromagnetic Kondo model for manganites: Phase diagram, charge segregation, and influence of quantum localized spins. <i>Physical Review B</i> , <b>1998</b> , 58, 6414-6427	3-3	183
7	Persistent currents in a MBI ladder: A test of interchain coherence of interacting electrons. <i>Physical Review B</i> , <b>1998</b> , 57, 1457-1460	3-3	15
6	Universal scaling behavior of coupled chains of interacting fermions. <i>Physical Review B</i> , <b>1998</b> , 57, 6360-6369	3-3	7
5	Numerical calculations of the B1g Raman spectrum of the two-dimensional Heisenberg model. <i>Physical Review B</i> , <b>1998</b> , 57, 8478-8493	3-3	28
4	Transverse transport in coupled strongly correlated electronic chains. <i>Zeitschrift für Physik B-Condensed Matter</i> , <b>1996</b> , 103, 173-176		1
3	Bond alternation of polyacetylene as a spin-Peierls distortion. <i>Chemical Physics Letters</i> , <b>1996</b> , 255, 238-243		13
2	One-particle interchain hopping in coupled Hubbard chains. <i>Physical Review B</i> , <b>1996</b> , 54, 10261-10264	3-3	8
1	Confinement and transverse conductivity in coupled Luttinger liquids. <i>Physical Review B</i> , <b>1996</b> , 54, 17547-17556	3-3	6