

# Anders W Sandvik

## List of Publications by Year in descending order

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152  
papers

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152  
docs citations

152  
times ranked

3090  
citing authors

#	ARTICLE	IF	CITATIONS
1	Quantum Monte Carlo with directed loops. Physical Review E, 2002, 66, 046701.	2.1	662
2	Stochastic series expansion method with operator-loop update. Physical Review B, 1999, 59, R14157-R14160.	3.2	610
3	Quantum Monte Carlo simulation method for spin systems. Physical Review B, 1991, 43, 5950-5961.	3.2	415
4	Evidence for Deconfined Quantum Criticality in a Two-Dimensional Heisenberg Model with Four-Spin Interactions. Physical Review Letters, 2007, 98, 227202.	7.8	393
5	Finite-size scaling of the ground-state parameters of the two-dimensional Heisenberg model. Physical Review B, 1997, 56, 11678-11690.	3.2	372
6	Computational Studies of Quantum Spin Systems. AIP Conference Proceedings, 2010, , .	0.4	320
7	Stochastic method for analytic continuation of quantum Monte Carlo data. Physical Review B, 1998, 57, 10287-10290.	3.2	208
8	Bond-order-wave phase and quantum phase transitions in the one-dimensional extended Hubbard model. Physical Review B, 2002, 65, .	3.2	180
9	Quantum criticality with two length scales. Science, 2016, 352, 213-216.	12.6	164
10	Antiferromagnetic to valence-bond-solid transitions in two-dimensional $S=1$ Heisenberg models with multispin interactions. Physical Review B, 2009, 80, .	3.2	163
11	Continuous Quantum Phase Transition between an Antiferromagnet and a Valence-Bond Solid in Two Dimensions: Evidence for Logarithmic Corrections to Scaling. Physical Review Letters, 2010, 104, 177201.	7.8	148
12	High-precision finite-size scaling analysis of the quantum-critical point of $S=1$ Heisenberg antiferromagnetic bilayers. Physical Review B, 2006, 73, .	3.2	139
13	Classical percolation transition in the diluted two-dimensional $S=1$ Heisenberg antiferromagnet. Physical Review B, 2002, 66, .	3.2	122
14	Specific heat of quasi-two-dimensional antiferromagnetic Heisenberg models with varying interplanar couplings. Physical Review B, 2003, 68, .	3.2	111
15	Stochastic series expansion method for quantum Ising models with arbitrary interactions. Physical Review E, 2003, 68, 056701.	2.1	103
16	Ground State Phases of the Half-Filled One-Dimensional Extended Hubbard Model. Physical Review Letters, 2004, 92, 236401.	7.8	102
17	Loop updates for variational and projector quantum Monte Carlo simulations in the valence-bond basis. Physical Review B, 2010, 82, .	3.2	100
18	Ashkin-Teller Criticality and Pseudo-First-Order Behavior in a Frustrated Ising Model on the Square Lattice. Physical Review Letters, 2012, 108, 045702.	7.8	99

#	ARTICLE	IF	CITATIONS
19	High-Energy Magnon Dispersion and Multimagnon Continuum in the Two-Dimensional Heisenberg Antiferromagnet. <i>Physical Review Letters</i> , 2001, 86, 528-531.	7.8	97
20	Critical Level Crossings and Gapless Spin Liquid in the Square-Lattice Spin- $\frac{1}{2}$ Heisenberg Antiferromagnet. <i>Physical Review Letters</i> , 2012, 108, 137201.	7.8	96
21	Large $N$ Limit of the Two-Dimensional Heisenberg Antiferromagnet. <i>Physical Review Letters</i> , 2012, 108, 137201.	7.8	95
22	Multichain Mean-Field Theory of Quasi-One-Dimensional Quantum Spin Systems. <i>Physical Review Letters</i> , 1999, 83, 3069-3072.	7.8	94
23	Sign problem in Monte Carlo simulations of frustrated quantum spin systems. <i>Physical Review B</i> , 2000, 62, 1102-1113.	3.2	91
24	Bridging Lattice-Scale Physics and Continuum Field Theory with Quantum Monte Carlo Simulations. <i>Annual Review of Condensed Matter Physics</i> , 2013, 4, 179-215.	14.5	90
25	Ground State Projection of Quantum Spin Systems in the Valence-Bond Basis. <i>Physical Review Letters</i> , 2005, 95, 207203.	7.8	88
26	Critical Temperature and the Transition from Quantum to Classical Order Parameter Fluctuations in the Three-Dimensional Heisenberg Antiferromagnet. <i>Physical Review Letters</i> , 1998, 80, 5196-5199.	7.8	86
27	Nearly Deconfined Spinon Excitations in the Square-Lattice Spin- $\frac{1}{2}$ Heisenberg Antiferromagnet. <i>Physical Review X</i> , 2017, 7, .	8.9	83
28	Duality between the Deconfined Quantum-Critical Point and the Bosonic Topological Transition. <i>Physical Review X</i> , 2017, 7, .	8.9	82
29	Phase transitions in the frustrated Ising model on the square lattice. <i>Physical Review B</i> , 2013, 87, .	3.2	71
30	Constrained sampling method for analytic continuation. <i>Physical Review E</i> , 2016, 94, 063308.	2.1	70
31	Some formal results for the valence bond basis. <i>Nuclear Physics B</i> , 2006, 750, 142-178.	2.5	66
32	Dynamical signature of fractionalization at a deconfined quantum critical point. <i>Physical Review B</i> , 2018, 98, .	3.2	65
33	Ground States of a Frustrated Quantum Spin Chain with Long-Range Interactions. <i>Physical Review Letters</i> , 2010, 104, 137204.	7.8	62
34	Finite-size scaling and boundary effects in two-dimensional valence-bond solids. <i>Physical Review B</i> , 2012, 85, .	3.2	62
35	Possible exotic phases in the one-dimensional extended Hubbard model. <i>Physical Review B</i> , 1999, 59, 4665-4679.	3.2	58
36	Emergence of $U(1)$ Symmetry in the 3D $XY$ Model with Anisotropy. <i>Physical Review Letters</i> , 2007, 99, 207203.	7.8	58

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37	Properties of resonating-valence-bond spin liquids and critical dimer models. <i>Physical Review B</i> , 2011, 84, .	3.2	58
38	Ground-state parameters, finite-size scaling, and low-temperature properties of the two-dimensional $S=12XY$ model. <i>Physical Review B</i> , 1999, 60, 6588-6593.	3.2	55
39	Multicritical Point in a Diluted Bilayer Heisenberg Quantum Antiferromagnet. <i>Physical Review Letters</i> , 2002, 89, 177201.	7.8	55
40	Finite-size scaling method for the Berezinskiiâ€“Kosterlitzâ€“Thouless transition. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2013, 2013, P09001.	2.3	54
41	Site dilution of quantum spins in the honeycomb lattice. <i>Physical Review B</i> , 2006, 73, .	3.2	53
42	Spin-Peierls Transition in the Heisenberg Chain with Finite-Frequency Phonons. <i>Physical Review Letters</i> , 1999, 83, 195-198.	7.8	52
43	Dynamic scaling at classical phase transitions approached through nonequilibrium quenching. <i>Physical Review B</i> , 2014, 89, .	3.2	49
44	Quantum critical behavior in a two-layer antiferromagnet. <i>Physical Review B</i> , 1995, 51, 16483-16486.	3.2	48
45	Correlations and confinement in nonplanar two-dimensional dimer models. <i>Physical Review B</i> , 2006, 73, .	3.2	48
46	Spin dynamics of $SrCu_2O_3$ and the Heisenberg ladder. <i>Physical Review B</i> , 1996, 53, R2934-R2937.	3.2	46
47	Symmetry-enhanced discontinuous phase transition in a two-dimensional quantum magnet. <i>Nature Physics</i> , 2019, 15, 678-682.	16.7	46
48	Scaling and Diabatic Effects in Quantum Annealing with a D-Wave Device. <i>Physical Review Letters</i> , 2020, 124, 090502.	7.8	44
49	NMR relaxation rates for the spin-1/2 Heisenberg chain. <i>Physical Review B</i> , 1995, 52, R9831-R9834.	3.2	43
50	Susceptibility of the 2D Spin-12 Heisenberg Antiferromagnet with an Impurity. <i>Physical Review Letters</i> , 2003, 91, 077204.	7.8	43
51	Random-Singlet Phase in Disordered Two-Dimensional Quantum Magnets. <i>Physical Review X</i> , 2018, 8, .	8.9	43
52	Peierls transition in the presence of finite-frequency phonons in the one-dimensional extended Peierls-Hubbard model at half-filling. <i>Physical Review B</i> , 2003, 67, .	3.2	40
53	Confinement in the Bulk, Deconfinement on the Wall: Infrared Equivalence between Compactified QCD and Quantum Magnets. <i>Physical Review Letters</i> , 2017, 119, 091601.	7.8	40
54	Quantum versus Classical Annealing: Insights from Scaling Theory and Results for Spin Glasses on 3-Regular Graphs. <i>Physical Review Letters</i> , 2015, 114, 147203.	7.8	39

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55	Magnetic Raman Scattering in Two-Dimensional Spin-1/2 Heisenberg Antiferromagnets: Spectral Shape Anomaly and Magnetostrictive Effects. <i>Physical Review Letters</i> , 1995, 75, 553-556.	7.8	38
56	1/N expansion for two-dimensional quantum ferromagnets. <i>Physical Review B</i> , 1998, 58, 1464-1484.	3.2	37
57	Quantum Phases of $\text{SrCu}_2\text{BO}_3$ from High-P. <i>Physical Review Letters</i> , 2020, 124, 206602.	7.8	37
58	Strong through-space two-halide magnetic exchange of $\sim 234$ K in (2,5-dimethylpyrazine)copper(ii) bromide. <i>Chemical Communications</i> , 2009, , 1359.	4.1	35
59	Amplitude Mode in Three-Dimensional Dimerized Antiferromagnets. <i>Physical Review Letters</i> , 2017, 118, 147207.	7.8	35
60	Numerical calculations of the Raman spectrum of the two-dimensional Heisenberg model. <i>Physical Review B</i> , 1998, 57, 8478-8493.	3.2	33
61	Variational ground states of two-dimensional antiferromagnets in the valence bond basis. <i>Physical Review B</i> , 2007, 76, .	3.2	33
62	Example of a first-order Néel to valence-bond-solid transition in two dimensions. <i>Physical Review B</i> , 2010, 82, .	3.2	33
63	Method to Characterize Spinons as Emergent Elementary Particles. <i>Physical Review Letters</i> , 2011, 107, 157201.	7.8	33
64	Disorder Induced Phase Transition in a Two-Dimensional Random Quantum Antiferromagnet. <i>Physical Review Letters</i> , 1995, 74, 1226-1229.	7.8	31
65	Detecting Signals of Weakly First-order Phase Transitions in Two-dimensional Potts Models. <i>Journal of the Physical Society of Japan</i> , 2019, 88, 034006.	1.6	31
66	Quantum Criticality and Percolation in Dimer-Diluted Two-Dimensional Antiferromagnets. <i>Physical Review Letters</i> , 2006, 96, 207201.	7.8	30
67	Symmetry breaking and criticality in tensor-product states. <i>Physical Review B</i> , 2010, 82, .	3.2	30
68	Confinement and Deconfinement of Spinons in Two Dimensions. <i>Physical Review Letters</i> , 2013, 110, 217213.	7.8	29
69	Level spectroscopy in a two-dimensional quantum magnet: Linearly dispersing spinons at the deconfined quantum critical point. <i>Physical Review B</i> , 2016, 94, .	3.2	29
70	Impurity Induced Spin Texture in Quantum Critical 2D Antiferromagnets. <i>Physical Review Letters</i> , 2007, 98, 087203.	7.8	28
71	Velocity of excitations in ordered, disordered, and critical antiferromagnets. <i>Physical Review B</i> , 2015, 92, .	3.2	28
72	Impurity effects at finite temperature in the two-dimensional $S=1/2$ Heisenberg antiferromagnet. <i>Physical Review B</i> , 2004, 70, .	3.2	27

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73	Thermodynamics of a Gas of Deconfined Bosonic Spinons in Two Dimensions. Physical Review Letters, 2011, 106, 207203.	7.8	27
74	Consistent Scaling Exponents at the Deconfined Quantum-Critical Point*. Chinese Physics Letters, 2020, 37, 057502.	3.3	27
75	Spin dynamics of $\text{La}_2\text{CuO}_4$ and the two-dimensional Heisenberg model. Physical Review B, 1995, 51, 9403-9406.	3.2	26
76	Monte Carlo study of a two-dimensional quantum ferromagnet. Physical Review B, 2000, 61, 364-374.	3.2	26
77	Stochastic series expansion algorithm for the $S=1$ XY model with four-site ring exchange. Physical Review E, 2005, 72, 026702.	2.1	26
78	Low-energy excitations of two-dimensional diluted Heisenberg quantum antiferromagnets. Physical Review B, 2010, 81, .	3.2	26
79	Quasi-adiabatic quantum Monte Carlo algorithm for quantum evolution in imaginary time. Physical Review B, 2013, 87, .	3.2	26
80	Comment on "Ground-State Phase Diagram of a Half-Filled One-Dimensional Extended Hubbard Model". Physical Review Letters, 2003, 91, 089701; discussion 089702.	7.8	25
81	Multiplicative logarithmic corrections to quantum criticality in three-dimensional dimerized antiferromagnets. Physical Review B, 2015, 92, .	3.2	25
82	Effects of intrabilayer coupling on the magnetic properties of $\text{YBa}_2\text{Cu}_3\text{O}_6$ . Physical Review B, 1996, 53, R526-R529.	3.2	24
83	Crossover effects in the random-exchange spin-1/2 antiferromagnetic chain. Physical Review B, 2004, 70, .	3.2	24
84	Dynamical properties of the random Heisenberg chain. Physical Review B, 2018, 97, .	3.2	24
85	Quantum criticality and spin liquid phase in the Shastry-Sutherland model. Physical Review B, 2022, 105, .	3.2	24
86	Existence of a Spectral Gap in the Affleck-Kennedy-Lieb-Tasaki Model on the Hexagonal Lattice. Physical Review Letters, 2020, 124, 177204.	7.8	23
87	Comment on "Quantum Phase Transition of the Randomly Diluted Heisenberg Antiferromagnet on a Square Lattice". Physical Review Letters, 2001, 86, 3209-3209.	7.8	21
88	Extreme Suppression of Antiferromagnetic Order and Critical Scaling in a Two-Dimensional Random Quantum Magnet. Physical Review Letters, 2021, 126, 037201.	7.8	21
89	Multicritical Deconfined Quantum Criticality and Lifshitz Point of a Helical Valence-Bond Phase. Physical Review Letters, 2020, 125, 257204.	7.8	21
90	Low-Energy Dynamics of the Two-Dimensional $S=1/2$ Heisenberg Antiferromagnet on Percolating Clusters. Physical Review Letters, 2006, 97, 117204.	7.8	20

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91	Universal dynamic scaling in three-dimensional Ising spin glasses. <i>Physical Review E</i> , 2015, 92, 022128.	2.1	20
92	Properties of the random-singlet phase: From the disordered Heisenberg chain to an amorphous valence-bond solid. <i>Physical Review B</i> , 2016, 94, .	3.2	20
93	Anomalous Quantum-Critical Scaling Corrections in Two-Dimensional Antiferromagnets. <i>Physical Review Letters</i> , 2018, 121, 117202.	7.8	20
94	Anomalous Curie Response of Impurities in Quantum-Critical Spin-1/2 Heisenberg Antiferromagnets. <i>Physical Review Letters</i> , 2007, 99, 027205.	7.8	19
95	Quantum phase transitions in disordered dimerized quantum spin models and the Harris criterion. <i>Physical Review B</i> , 2010, 82, .	3.2	19
96	Universal Néel temperature in three-dimensional quantum antiferromagnets. <i>Physical Review B</i> , 2012, 85, .	3.2	19
97	Monte Carlo Renormalization Flows in the Space of Relevant and Irrelevant Operators: Application to Three-Dimensional Clock Models. <i>Physical Review Letters</i> , 2020, 124, 080602.	7.8	18
98	Thermal valence-bond-solid transition of quantum spins in two dimensions. <i>Physical Review B</i> , 2013, 87, .	3.2	16
99	Field-driven quantum phase transitions in $S=1$ spin chains. <i>Physical Review B</i> , 2017, 95, .	3.2	16
100	Magnetic ordering in a doped frustrated spin-Peierls system. <i>Physical Review B</i> , 2004, 69, .	3.2	14
101	Valence Bond Solid Phases in a Cubic Antiferromagnet. <i>Physical Review Letters</i> , 2007, 99, 047202.	7.8	14
102	Impurity-Induced Frustration in Correlated Oxides. <i>Physical Review Letters</i> , 2009, 102, 167201.	7.8	14
103	Plaquette renormalization scheme for tensor network states. <i>Physical Review E</i> , 2011, 83, 056703.	2.1	14
104	Quantum Monte Carlo studies of spinons in one-dimensional spin systems. <i>Physical Review B</i> , 2015, 92, .	3.2	14
105	Valence-bond solids, vestigial order, and emergent $SO(5)$ symmetry in a two-dimensional quantum magnet. <i>Physical Review Research</i> , 2020, 2, .	3.6	14
106	Criticality and Mott glass phase in a disordered two-dimensional quantum spin system. <i>Physical Review B</i> , 2014, 90, .	3.2	12
107	Anomalous Quantum Glass of Bosons in a Random Potential in Two Dimensions. <i>Physical Review Letters</i> , 2015, 114, 105303.	7.8	12
108	Dynamic scaling of topological ordering in classical systems. <i>Physical Review B</i> , 2018, 97, .	3.2	12

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109	Metamagnetism and zero-scale-factor universality in the two-dimensional $JQ$ model. Physical Review B, 2018, 98, .		
110	NMR relaxation in the spin-1 Heisenberg chain. Physical Review B, 2019, 100, .	3.2	12
111	Edge effects in the two-dimensional spin-1 Heisenberg antiferromagnet. Physical Review B, 2009, 79, .	3.2	11
112	Correlated valence-bond states. Physical Review B, 2012, 86, .	3.2	11
113	1D valence bond solids in a magnetic field. Journal of Physics: Conference Series, 2015, 640, 012043.	0.4	11
114	Emergent topological excitations in a two-dimensional quantum spin system. Physical Review B, 2015, 91, .	3.2	11
115	Numerical investigations of $SO(4)$ emergent extended symmetry in spin-1/2 Heisenberg antiferromagnetic chains. Physical Review B, 2018, 98, .	3.2	11
116	Emergent $O(4)$ symmetry at the phase transition from plaquette-singlet to antiferromagnetic order in quasi-two-dimensional quantum magnets*. Chinese Physics B, 2021, 30, 067505.	1.4	11
117	Hilbert space fragmentation and Ashkin-Teller criticality in fluctuation coupled Ising models. Physical Review B, 2020, 101, .	3.2	10
118	Unconventional $U(1)$ to $Z_q$ crossover in quantum and classical $JQ$ -state clock models. Physical Review B, 2021, 103, .	3.2	10
119	Dual time scales in simulated annealing of a two-dimensional Ising spin glass. Physical Review E, 2017, 95, 052133.	2.1	9
120	Quantum-critical scaling properties of the two-dimensional random-singlet state. Physical Review B, 2020, 102, .	3.2	9
121	Scale-Renormalized Matrix-Product States for Correlated Quantum Systems. Physical Review Letters, 2008, 101, 140603.	7.8	8
122	Definitions of entanglement entropy of spin systems in the valence-bond basis. Physical Review B, 2010, 82, .	3.2	8
123	Tunable deconfined quantum criticality and interplay of different valence-bond solid phases. Chinese Physics B, 2020, 29, 057506.	1.4	8
124	Fractional and composite excitations of antiferromagnetic quantum spin trimer chains. Npj Quantum Materials, 2022, 7, .	5.2	8
125	Numerical study of a two-dimensional quantum antiferromagnet with random ferromagnetic bonds. Physical Review B, 1994, 50, 15803-15807.	3.2	7
126	$Z_4$ to $U(1)$ crossover of the order-parameter symmetry in a two-dimensional valence-bond solid. Physical Review B, 2009, 80, .	3.2	6



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127	Dynamic scaling in the two-dimensional Ising spin glass with normal-distributed couplings. Physical Review E, 2017, 96, 052102.	2.1	6
128	Comment on "Gapless spin liquid ground state of the spin-1/2 Heisenberg model on square lattices". Physical Review B, 2020, 101, .	3.2	6
129	Quantum Spin Liquid Phase in the Shastry-Sutherland Model Detected by an Improved Level Spectroscopic Method. Chinese Physics Letters, 2022, 39, 077502.	3.3	6
130	Role of winding numbers in quantum Monte Carlo simulations. Physical Review B, 1998, 57, 13382-13385.	3.2	5
131	Dynamic scaling of the restoration of rotational symmetry in Heisenberg quantum antiferromagnets. Physical Review B, 2017, 96, .	3.2	5
132	The AKLT Model on a Hexagonal Chain is Gapped. Journal of Statistical Physics, 2019, 177, 1077-1088.	1.2	5
133	Error reduction using covariance in quantum Monte Carlo simulations. Physical Review B, 1996, 54, 14910-14913.	3.2	4
134	Indicators of conformal field theory: Entanglement entropy and multiple-point correlators. Physical Review B, 2017, 96, .	3.2	4
135	Typicality at quantum-critical points. Chinese Physics B, 2018, 27, 087501.	1.4	4
136	Pair hopping in systems of strongly interacting hard-core bosons. Physical Review B, 2019, 100, .	3.2	4
137	The Directed-Loop Algorithm. AIP Conference Proceedings, 2003, , .	0.4	3
138	Modulated phases in a three-dimensional Maier-Saupe model with competing interactions. Physical Review E, 2017, 96, 012137.	2.1	3
139	Temperature dependence of the $(\pi,0)$ anomaly in the excitation spectrum of the 2D quantum Heisenberg antiferromagnet. Journal of Physics Condensed Matter, 2020, 32, 374007.	1.8	3
140	Bose-Einstein condensation of deconfined spinons in two dimensions. Physical Review B, 2020, 101, .	3.2	3
141	Effects of edge disorder in nanoscale antiferromagnetic clusters. Physical Review B, 2010, 82, .	3.2	2
142	Antiferromagnetic order in systems with doublet ground states. Physical Review B, 2012, 86, .	3.2	2
143	$\mathbb{Z}_2$ topological order and first-order quantum phase transitions in systems with combinatorial gauge symmetry. Physical Review B, 2021, 104, .	3.2	2
144	An introduction to quantum monte carlo methods. , 1997, , 109-135.		1

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145	Quantum Monte Carlo Simulations of Bosonic and Fermionic Impurities in a Two-Dimensional Hard-Core Boson System. <i>Physical Review Letters</i> , 2008, 101, 120405.	7.8	1
146	Two-orbital quantum spin model of magnetism in the iron pnictides. <i>Physical Review B</i> , 2012, 85, .	3.2	1
147	Mott glass phase in a diluted bilayer Heisenberg quantum antiferromagnet. <i>Journal of Physics: Conference Series</i> , 2015, 640, 012045.	0.4	1
148	Finite-Size Scaling in the Diluted Two-Dimensional Heisenberg Antiferromagnet. <i>Progress of Theoretical Physics Supplement</i> , 2002, 145, 332-338.	0.1	0
149	Antiferromagnetism induced by non-magnetic dopants in coupled spin-1 Peierls chains. <i>Journal of Physics Condensed Matter</i> , 2004, 16, 6747-6753.	1.8	0
150	Antiferromagnetic order in systems with doublet $S_{\text{tot}} = 1/2$ ground states. , 2013, , .		0
151	Topological properties of a Valence-Bond-Solid. <i>Journal of Physics: Conference Series</i> , 2015, 640, 012048.	0.4	0
152	From Finite Temperature Many-Body Perturbation Theory to Series Expansions and Monte Carlo Simulations. <i>Springer Proceedings in Physics</i> , 1999, , 71-83.	0.2	0