

Juan JosÃ© GarcÃ­a-Ripoll

List of Publications by Year in descending order

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160
papers

9,045
citations

50276

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g-index

164
all docs

164
docs citations

164
times ranked

5072
citing authors

#	ARTICLE	IF	CITATIONS
1	Circuit quantum electrodynamics in the ultrastrong-coupling regime. <i>Nature Physics</i> , 2010, 6, 772-776.	16.7	1,086
2	Matrix Product Density Operators: Simulation of Finite-Temperature and Dissipative Systems. <i>Physical Review Letters</i> , 2004, 93, 207204.	7.8	724
3	Observation of the Bloch-Siegert Shift in a Qubit-Oscillator System in the Ultrastrong Coupling Regime. <i>Physical Review Letters</i> , 2010, 105, 237001.	7.8	597
4	Deep Strong Coupling Regime of the Jaynes-Cummings Model. <i>Physical Review Letters</i> , 2010, 105, 263603.	7.8	439
5	Ultrastrong coupling of a single artificial atom to an electromagnetic continuum in the nonperturbative regime. <i>Nature Physics</i> , 2017, 13, 39-43.	16.7	353
6	Strong Dissipation Inhibits Losses and Induces Correlations in Cold Molecular Gases. <i>Science</i> , 2008, 320, 1329-1331.	12.6	304
7	Speed Optimized Two-Qubit Gates with Laser Coherent Control Techniques for Ion Trap Quantum Computing. <i>Physical Review Letters</i> , 2003, 91, 157901.	7.8	226
8	Implementation of Spin Hamiltonians in Optical Lattices. <i>Physical Review Letters</i> , 2004, 93, 250405.	7.8	200
9	Quantum Simulation of the Klein Paradox with Trapped Ions. <i>Physical Review Letters</i> , 2011, 106, 060503.	7.8	169
10	Seeing Topological Order in Time-of-Flight Measurements. <i>Physical Review Letters</i> , 2011, 107, 235301.	7.8	163
11	Switchable Ultrastrong Coupling in Circuit QED. <i>Physical Review Letters</i> , 2010, 105, 023601.	7.8	149
12	Extended Parametric Resonances in Nonlinear Schrödinger Systems. <i>Physical Review Letters</i> , 1999, 83, 1715-1718.	7.8	144
13	Microwave Photon Detector in Circuit QED. <i>Physical Review Letters</i> , 2009, 102, 173602.	7.8	136
14	Dipole-Mode Vector Solitons. <i>Physical Review Letters</i> , 2000, 85, 82-85.	7.8	120
15	Time evolution of Matrix Product States. <i>New Journal of Physics</i> , 2006, 8, 305-305.	2.9	116
16	Ultrastrong-coupling phenomena beyond the Dicke model. <i>Physical Review A</i> , 2016, 94, .	2.5	110
17	Dissipation-induced hard-core boson gas in an optical lattice. <i>New Journal of Physics</i> , 2009, 11, 013053.	2.9	108
18	Tunable coupling engineering between superconducting resonators: From sidebands to effective gauge fields. <i>Physical Review B</i> , 2013, 87, .	3.2	106

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19	Scattering in the Ultrastrong Regime: Nonlinear Optics with One Photon. <i>Physical Review Letters</i> , 2014, 113, 263604.	7.8	106
20	Quantum Simulation of the Ultrastrong-Coupling Dynamics in Circuit Quantum Electrodynamics. <i>Physical Review X</i> , 2012, 2, .	8.9	104
21	Nonequilibrium and Nonperturbative Dynamics of Ultrastrong Coupling in Open Lines. <i>Physical Review Letters</i> , 2013, 111, 243602.	7.8	96
22	Dynamics of quasicollapse in nonlinear Schrödinger systems with nonlocal interactions. <i>Physical Review E</i> , 2000, 62, 4300-4308.	2.1	92
23	Coherent control of trapped ions using off-resonant lasers. <i>Physical Review A</i> , 2005, 71, .	2.5	92
24	Coherent manipulation of three-qubit states in a molecular single-ion magnet. <i>Physical Review B</i> , 2017, 95, .	3.2	88
25	Approaching perfect microwave photodetection in circuit QED. <i>Physical Review A</i> , 2011, 84, .	2.5	85
26	Optimizing Schrödinger Functionals Using Sobolev Gradients: Applications to Quantum Mechanics and Nonlinear Optics. <i>SIAM Journal of Scientific Computing</i> , 2001, 23, 1316-1334.	2.8	84
27	Quantum Estimation Methods for Quantum Illumination. <i>Physical Review Letters</i> , 2017, 118, 070803.	7.8	83
28	Coupling single-molecule magnets to quantum circuits. <i>New Journal of Physics</i> , 2013, 15, 095007.	2.9	82
29	Vortex bending and tightly packed vortex lattices in Bose-Einstein condensates. <i>Physical Review A</i> , 2001, 64, .	2.5	79
30	Vortex nucleation and hysteresis phenomena in rotating Bose-Einstein condensates. <i>Physical Review A</i> , 2001, 63, .	2.5	76
31	Spin dynamics for bosons in an optical lattice. <i>New Journal of Physics</i> , 2003, 5, 76-76.	2.9	74
32	Klein tunneling and Dirac potentials in trapped ions. <i>Physical Review A</i> , 2010, 82, .	2.5	74
33	Unitary quantum perceptron as efficient universal approximator. <i>Europhysics Letters</i> , 2019, 125, 30004.	2.0	73
34	Quantum Simulation of Quantum Field Theories in Trapped Ions. <i>Physical Review Letters</i> , 2011, 107, 260501.	7.8	72
35	Stable and Unstable Vortices in Multicomponent Bose-Einstein Condensates. <i>Physical Review Letters</i> , 2000, 84, 4264-4267.	7.8	71
36	Relativistic quantum mechanics with trapped ions. <i>New Journal of Physics</i> , 2011, 13, 095003.	2.9	64

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37	Stability of vortices in inhomogeneous Bose condensates subject to rotation: A three-dimensional analysis. <i>Physical Review A</i> , 1999, 60, 4864-4874.	2.5	62
38	Quantum information processing with cold atoms and trapped ions. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2005, 38, S567-S578.	1.5	62
39	Lieb-Liniger model of a dissipation-induced Tonks-Girardeau gas. <i>Physical Review A</i> , 2009, 79, .	2.5	57
40	Scattering of coherent states on a single artificial atom. <i>New Journal of Physics</i> , 2013, 15, 035009.	2.9	55
41	Tunable and switchable coupling between two superconducting resonators. <i>Physical Review B</i> , 2015, 91, .	3.2	55
42	Dynamical signatures of bound states in waveguide QED. <i>Physical Review A</i> , 2017, 96, .	2.5	55
43	Barrier resonances in Bose-Einstein condensation. <i>Physical Review A</i> , 1999, 59, 2220-2231.	2.5	52
44	A quasi-local Gross-Pitaevskii equation for attractive Bose-Einstein condensates. <i>Mathematics and Computers in Simulation</i> , 2003, 62, 21-30.	4.4	52
45	Quantum ratchets for quantum communication with optical superlattices. <i>Physical Review A</i> , 2007, 76, .	2.5	50
46	Structural Instability of Vortices in Bose-Einstein Condensates. <i>Physical Review Letters</i> , 2001, 87, 140403.	7.8	49
47	Quantum Simulation of the Majorana Equation and Unphysical Operations. <i>Physical Review X</i> , 2011, 1, .	8.9	48
48	Ultrastrong Coupling Few-Photon Scattering Theory. <i>Physical Review Letters</i> , 2018, 120, 153602.	7.8	47
49	Multipole spatial vector solitons. <i>Optics Letters</i> , 2001, 26, 435.	3.3	43
50	Construction of exact solutions by spatial translations in inhomogeneous nonlinear Schrödinger equations. <i>Physical Review E</i> , 2001, 64, 056602.	2.1	42
51	Zeno physics in ultrastrong-coupling circuit QED. <i>Physical Review A</i> , 2010, 81, .	2.5	42
52	Hybrid Quantum Magnetism in Circuit QED: From Spin-Photon Waves to Many-Body Spectroscopy. <i>Physical Review Letters</i> , 2014, 112, 180405.	7.8	42
53	Light-matter decoupling and A2 term detection in superconducting circuits. <i>Scientific Reports</i> , 2015, 5, 16055.	3.3	42
54	Temperature-independent quantum logic for molecular spectroscopy. <i>Physical Review A</i> , 2012, 85, .	2.5	41

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55	Shaping an Itinerant Quantum Field into a Multimode Squeezed Vacuum by Dissipation. <i>Physical Review Letters</i> , 2012, 108, 043602.	7.8	41
56	Dynamical polaron Ansatz: A theoretical tool for the ultrastrong-coupling regime of circuit QED. <i>Physical Review A</i> , 2016, 93, .	2.5	39
57	Quantum Computation with Unknown Parameters. <i>Physical Review Letters</i> , 2003, 90, 127902.	7.8	38
58	Vortex revivals with trapped light. <i>Optics Letters</i> , 2001, 26, 1601.	3.3	36
59	Split vortices in optically coupled Bose-Einstein condensates. <i>Physical Review A</i> , 2002, 66, .	2.5	36
60	Ground-state cooling of atoms in optical lattices. <i>Physical Review A</i> , 2006, 74, .	2.5	33
61	Photodetection of propagating quantum microwaves in circuit QED. <i>Physica Scripta</i> , 2009, T137, 014004.	2.5	33
62	Quantum simulation of Anderson and Kondo lattices with superconducting qubits. <i>Physical Review B</i> , 2008, 77, .	3.2	31
63	Circuit QED Bright Source for Chiral Entangled Light Based on Dissipation. <i>Physical Review Letters</i> , 2013, 111, 073602.	7.8	31
64	Lieb-Robinson Bounds for Spin-Boson Lattice Models and Trapped Ions. <i>Physical Review Letters</i> , 2013, 111, 230404.	7.8	31
65	Full two-photon down-conversion of a single photon. <i>Physical Review A</i> , 2016, 94, .	2.5	31
66	Fast High-Fidelity Quantum Nondemolition Qubit Readout via a Nonperturbative Cross-Kerr Coupling. <i>Physical Review X</i> , 2020, 10, .	8.9	31
67	Inducing Nonclassical Lasing via Periodic Drivings in Circuit Quantum Electrodynamics. <i>Physical Review Letters</i> , 2014, 113, 193601.	7.8	30
68	Microwave photonics with Josephson junction arrays: Negative refraction index and entanglement through disorder. <i>Physical Review B</i> , 2012, 86, .	3.2	29
69	Fermi Problem with Artificial Atoms in Circuit QED. <i>Physical Review Letters</i> , 2011, 107, 150402.	7.8	28
70	Pair condensation of bosonic atoms induced by optical lattices. <i>Physical Review A</i> , 2008, 77, .	2.5	27
71	Ultrastrongly dissipative quantum Rabi model. <i>Physical Review A</i> , 2019, 99, .	2.5	27
72	Experimental Reconstruction of the Few-Photon Nonlinear Scattering Matrix from a Single Quantum Dot in a Nanophotonic Waveguide. <i>Physical Review Letters</i> , 2021, 126, 023603.	7.8	27

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73	Moment analysis of paraxial propagation in a nonlinear graded index fibre. Journal of Optics B: Quantum and Semiclassical Optics, 2000, 2, 353-358.	1.4	26
74	Single Photons by Quenching the Vacuum. Physical Review Letters, 2019, 123, 013601.	7.8	26
75	Nonlinear quantum optics in the (ultra)strong light-matter coupling. Faraday Discussions, 2015, 178, 335-356.	3.2	25
76	Correlated hopping of bosonic atoms induced by optical lattices. New Journal of Physics, 2009, 11, 093028.	2.9	23
77	Quantum-inspired algorithms for multivariate analysis: from interpolation to partial differential equations. Quantum - the Open Journal for Quantum Science, 0, 5, 431.	0.0	23
78	Anomalous rotational properties of Bose-Einstein condensates in asymmetric traps. Physical Review A, 2001, 64, .	2.5	22
79	Efficient algorithm for multiqubit twirling for ensemble quantum computation. Physical Review A, 2007, 75, .	2.5	22
80	Dynamics of entanglement via propagating microwave photons. Physical Review B, 2010, 81, .	3.2	22
81	Variational ansatz for the superfluid Mott-insulator transition in optical lattices. Optics Express, 2004, 12, 42.	3.4	21
82	Preparation of decoherence-free cluster states with optical superlattices. Physical Review A, 2009, 79, .	2.5	21
83	Simulating Dirac fermions with Abelian and non-Abelian gauge fields in optical lattices. Annals of Physics, 2013, 328, 64-82.	2.8	20
84	Photon-mediated qubit interactions in one-dimensional discrete and continuous models. Physical Review A, 2015, 91, .	2.5	20
85	How Much Entanglement Can Be Generated between Two Atoms by Detecting Photons?. Physical Review Letters, 2007, 98, 010502.	7.8	19
86	Chiral entanglement in triangular lattice models. Physical Review A, 2008, 77, .	2.5	19
87	Quantum computation with cold bosonic atoms in an optical lattice. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2003, 361, 1537-1548.	3.4	18
88	Continuous matrix product states for coupled fields: Application to Luttinger liquids and quantum simulators. Physical Review B, 2014, 90, .	3.2	17
89	Entanglement Detection in Coupled Particle Plasmons. Physical Review Letters, 2014, 112, .	7.8	17
90	Stationary discrete solitons in a driven dissipative Bose-Hubbard chain. Physical Review A, 2015, 91, .	2.5	17

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91	Cooling toolbox for atoms in optical lattices. <i>New Journal of Physics</i> , 2006, 8, 164-164.	2.9	16
92	Quantum Control of Frequency-Tunable Transmon Superconducting Qubits. <i>Physical Review Applied</i> , 2020, 14, .	3.8	16
93	Topological input-output theory for directional amplification. <i>Physical Review A</i> , 2021, 103, .	2.5	16
94	Spin monopoles with Bose-Einstein condensates. <i>Physical Review A</i> , 2000, 61, .	2.5	15
95	Seeing Majorana fermions in time-of-flight images of staggered spinless fermions coupled by-wave pairing. <i>Physical Review A</i> , 2013, 88, .	2.5	15
96	Quantum variational optimization: The role of entanglement and problem hardness. <i>Physical Review A</i> , 2021, 104, .	2.5	15
97	Detection of Chern numbers and entanglement in topological two-species systems through subsystem winding numbers. <i>New Journal of Physics</i> , 2014, 16, 083022.	2.9	14
98	Automatic design of quantum feature maps. <i>Quantum Science and Technology</i> , 2021, 6, 045015.	5.8	14
99	Equivalence between spin Hamiltonians and boson sampling. <i>Physical Review A</i> , 2017, 95, .	2.5	13
100	Multiphoton Scattering Tomography with Coherent States. <i>Physical Review Letters</i> , 2017, 119, 153601.	7.8	13
101	Quantum Fourier analysis for multivariate functions and applications to a class of Schrödinger-type partial differential equations. <i>Physical Review A</i> , 2022, 105, .	2.5	12
102	Dynamical Creation of Bosonic Cooper-Like Pairs. <i>Physical Review Letters</i> , 2008, 100, 110406.	7.8	11
103	From Josephson junction metamaterials to tunable pseudo-cavities. <i>Superconductor Science and Technology</i> , 2013, 26, 074006.	3.5	11
104	Lattice scars: surviving in an open discrete billiard. <i>New Journal of Physics</i> , 2014, 16, 035005.	2.9	11
105	Modulated Continuous Wave Control for Energy-Efficient Electron-Nuclear Spin Coupling. <i>Physical Review Letters</i> , 2019, 122, 010407.	7.8	11
106	Mapping the spatial distribution of entanglement in optical lattices. <i>Physical Review A</i> , 2010, 82, .	2.5	10
107	Quantum annealing in spin-boson model: from a perturbative to an ultrastrong mediated coupling. <i>New Journal of Physics</i> , 2018, 20, 113027.	2.9	10
108	Quantum Chaos in an Ultrastrongly Coupled Bosonic Junction. <i>Physical Review Letters</i> , 2014, 112, 074101.	7.8	9

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109	One- and two-photon scattering from generalized V-type atoms. <i>Physical Review A</i> , 2016, 94, .	2.5	9
110	Projected Entangled Pair States: Fundamental Analytical and Numerical Limitations. <i>Physical Review Letters</i> , 2020, 125, 210504.	7.8	9
111	Fragmentation and destruction of the superfluid due to frustration of cold atoms in optical lattices. <i>New Journal of Physics</i> , 2007, 9, 139-139.	2.9	8
112	Quantum tomography in position and momentum space. <i>European Physical Journal D</i> , 2012, 66, 1.	1.3	8
113	Emergent causality and the N-photon scattering matrix in waveguide QED. <i>New Journal of Physics</i> , 2018, 20, 013017.	2.9	8
114	Correlated dephasing noise in single-photon scattering. <i>New Journal of Physics</i> , 2018, 20, 105007.	2.9	8
115	Quantum probe of an on-chip broadband interferometer for quantum microwave photonics. <i>Superconductor Science and Technology</i> , 2018, 31, 115002.	3.5	8
116	Hybrid quantum-classical optimization with cardinality constraints and applications to finance. <i>Quantum Science and Technology</i> , 2021, 6, 034010.	5.8	8
117	Ultra-fast two-qubit ion gate using sequences of resonant pulses. <i>New Journal of Physics</i> , 2020, 22, 103024.	2.9	8
118	Scattering of dipole-mode vector solitons: Theory and experiment. <i>Physical Review E</i> , 2003, 68, 016612.	2.1	7
119	Hall response of interacting bosonic atoms in strong gauge fields: From condensed to fractional-quantum-Hall states. <i>Physical Review A</i> , 2013, 87, .	2.5	7
120	Quantum simulation with a boson sampling circuit. <i>Physical Review A</i> , 2016, 94, .	2.5	7
121	Qubit-photon corner states in all dimensions. <i>Physical Review Research</i> , 2020, 2, .	3.6	7
122	Detecting ground-state qubit self-excitations in circuit QED: A slow quantum anti-Zeno effect. <i>Physical Review B</i> , 2011, 84, .	3.2	6
123	Bose-Hubbard models with photon pairing in circuit-QED. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2013, 46, 224024.	1.5	6
124	Entangled microwaves as a resource for entangling spatially separate solid-state qubits: Superconducting qubits, nitrogen-vacancy centers, and magnetic molecules. <i>Physical Review A</i> , 2016, 93, .	2.5	6
125	Quantum Emulation of Molecular Force Fields: A Blueprint for a Superconducting Architecture. <i>Physical Review Applied</i> , 2017, 8, .	3.8	6
126	Ultraviolet Laser Pulses with Multigigahertz Repetition Rate and Multiwatt Average Power for Fast Trapped-Ion Entanglement Operations. <i>Physical Review Applied</i> , 2021, 15, .	3.8	6

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127	Encoding relativistic potential dynamics into free evolution. <i>Physical Review A</i> , 2012, 85, .	2.5	5
128	The Bose–Hubbard model with squeezed dissipation. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2015, 48, 055302.	1.5	5
129	Winding number order in the Haldane model with interactions. <i>New Journal of Physics</i> , 2016, 18, 033022.	2.9	5
130	Ultrastrong-coupling circuit QED in the radio-frequency regime. <i>Physical Review A</i> , 2019, 100, .	2.5	5
131	Mediator-assisted cooling in quantum annealing. <i>Physical Review A</i> , 2020, 101, .	2.5	5
132	Solvable model of dissipative dynamics in the deep strong coupling regime. <i>European Physical Journal: Special Topics</i> , 2012, 203, 207-216.	2.6	4
133	Three-Josephson junctions flux qubit couplings. <i>Applied Physics Letters</i> , 2021, 119, 222601.	3.3	4
134	Ultrastrong Capacitive Coupling of Flux Qubits. <i>Physical Review Applied</i> , 2022, 17, .	3.8	4
135	Universal Deterministic Quantum Operations in Microwave Quantum Links. <i>Physical Review Applied</i> , 2022, 17, .	3.8	4
136	Measuring molecular electric dipoles using trapped atomic ions and ultrafast laser pulses. <i>Physical Review A</i> , 2015, 91, .	2.5	3
137	Topological phases in the Haldane model with spin–spin on-site interactions. <i>New Journal of Physics</i> , 2018, 20, 043033.	2.9	3
138	Topological bulk states and their currents. <i>Physical Review B</i> , 2020, 102, .	3.2	3
139	Quantum Simulation of Non–Perturbative Cavity QED with Trapped Ions. <i>Advanced Quantum Technologies</i> , 2020, 3, 1900125.	3.9	3
140	Remote Individual Addressing of Quantum Emitters with Chirped Pulses. <i>Physical Review Letters</i> , 2021, 126, 103602.	7.8	3
141	Visualizing the emission of a single photon with frequency and time resolved spectroscopy. <i>Quantum - the Open Journal for Quantum Science</i> , 0, 5, 474.	0.0	3
142	Complete Physical Characterization of Quantum Nondemolition Measurements via Tomography. <i>Physical Review Letters</i> , 2022, 129, .	7.8	3
143	Strong correlation effects and quantum information theory of low dimensional atomic gases. <i>European Physical Journal Special Topics</i> , 2004, 116, 135-168.	0.2	2
144	Course 4 Quantum optical implementation of quantum information processing. <i>Les Houches Summer School Proceedings</i> , 2004, 79, 187-222.	0.2	2

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145	Generating and verifying graph states for fault-tolerant topological measurement-based quantum computing in two-dimensional optical lattices. <i>Physical Review A</i> , 2013, 88, .	2.5	2
146	Collective modes of a trapped ion-dipole system. <i>Applied Physics B: Lasers and Optics</i> , 2014, 114, 283-294.	2.2	2
147	Driven spin-boson Luttinger liquids. <i>New Journal of Physics</i> , 2015, 17, 115011.	2.9	2
148	The interspersed spin boson lattice model. <i>European Physical Journal: Special Topics</i> , 2015, 224, 483-496.	2.6	2
149	Topological phases of shaken quantum Ising lattices. <i>New Journal of Physics</i> , 2016, 18, 023030.	2.9	2
150	Gaussian phase sensitivity of boson-sampling-inspired strategies. <i>Physical Review A</i> , 2021, 103, .	2.5	2
151	Non-equilibrium coupling of a quartz resonator to ions for Penning-trap fast resonant detection. <i>Quantum Science and Technology</i> , 2021, 6, 044002.	5.8	2
152	Phase Stabilization of a Frequency Comb using Multipulse Quantum Interferometry. <i>Physical Review Letters</i> , 2014, 112, 073603.	7.8	1
153	Seeing topological edge and bulk currents in time-of-flight images. <i>Physical Review B</i> , 2020, 102, .	3.2	1
154	Coherent control and geometrical phases for trapped ions. , 0, , .		0
155	Quantum Computing with Cold Ions and Atoms: Theory. , 0, , 391-422.		0
156	Publisher's Note: Quantum ratchets for quantum communication with optical superlattices [<i>Phys. Rev. A</i> 76, 052304 (2007)]. <i>Physical Review A</i> , 2007, 76, .	2.5	0
157	Publisher's Note: Efficient algorithm for multiqubit twirling for ensemble quantum computation [<i>Phys. Rev. A</i> 75, 042311 (2007)]. <i>Physical Review A</i> , 2007, 75, .	2.5	0
158	Publisher's Note: Mapping the spatial distribution of entanglement in optical lattices [<i>Phys. Rev. A</i> 82, 062321 (2010)]. <i>Physical Review A</i> , 2011, 83, .	2.5	0
159	Nonclassical lasing in circuit quantum electrodynamics. , 2013, , .		0
160	Fast quantum gates and coherent control with trapped ions. , 2004, , .		0