Alexej I Streltsov

List of Publications by Year
in descending order

69	2,818	136950	175258
papers	citations	32 h-index	52 g-index

69	69	69	905
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Multiconfigurational time-dependent Hartree method for bosons: Many-body dynamics of bosonic systems. Physical Review A, 2008, 77, .	2.5	280
2	Role of Excited States in the Splitting of a Trapped Interacting Bose-Einstein Condensate by a Time-Dependent Barrier. Physical Review Letters, 2007, 99, 030402.	7.8	175
3	Exact Quantum Dynamics of a Bosonic Josephson Junction. Physical Review Letters, 2009, 103, 220601.	7.8	163
4	Unified view on multiconfigurational time propagation for systems consisting of identical particles. Journal of Chemical Physics, 2007, 127, 154103.	3.0	124
5	Reduced density matrices and coherence of trapped interacting bosons. Physical Review A, 2008, 78, .	2.5	124
6	General variational many-body theory with complete self-consistency for trapped bosonic systems. Physical Review A, 2006, 73, .	2.5	119
7	Numerically exact quantum dynamics of bosons with time-dependent interactions of harmonic type. Physical Review A, 2012, 86, .	2.5	92
8	Zoo of Quantum Phases and Excitations of Cold Bosonic Atoms in Optical Lattices. Physical Review Letters, 2005, 95, 030405.	7.8	80
9	Best mean-field for condensates. Physics Letters, Section A: General, Atomic and Solid State Physics, 2003, 318, 564-569.	2.1	71
10	Colloquium : Multiconfigurational time-dependent Hartree approaches for indistinguishable particles. Reviews of Modern Physics, 2020, 92, .	45.6	67
11	Exact ground state of finite Bose-Einstein condensates on a ring. Physical Review A, 2005, 72, .	2.5	64
12	Scattering of an attractive Bose-Einstein condensate from a barrier: Formation of quantum superposition states. Physical Review A, 2009, 80, .	2.5	64
13	Formation and Dynamics of Many-Boson Fragmented States in One-Dimensional Attractive Ultracold Gases. Physical Review Letters, 2008, 100, 130401.	7.8	59
14	How an interacting many-body system tunnels through a potential barrier to open space. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 13521-13525.	7.1	55
15	Ground-state fragmentation of repulsive Bose-Einstein condensates in double-trap potentials. Physical Review A, 2004, 70, .	2.5	52
16	Quantum dynamics of attractive versus repulsive bosonic Josephson junctions: Bose-Hubbard and full-Hamiltonian results. Physical Review A, 2010, 82, .	2.5	52
17	Multiconfigurational time-dependent Hartree method for mixtures consisting of two types of identical particles. Physical Review A, 2007, 76, .	2.5	50
18	General mapping for bosonic and fermionic operators in Fock space. Physical Review A, 2010, 81, .	2.5	47

#	Article	IF	Citations
19	Wave chaos as signature for depletion of a Bose-Einstein condensate. Physical Review A, 2012, 86, .	2.5	46
20	Accurate multi-boson long-time dynamics in triple-well periodic traps. Physical Review A, 2011, 83, .	2.5	45
21	Universality of fragmentation in the SchrÃ¶dinger dynamics of bosonic Josephson junctions. Physical Review A, 2014, 89, .	2.5	44
22	Swift Loss of Coherence of Soliton Trains in Attractive Bose-Einstein Condensates. Physical Review Letters, 2011, 106, 240401.	7.8	39
23	Two trapped particles interacting by a finite-range two-body potential in two spatial dimensions. Physical Review A, 2013, 87, .	2.5	39
24	Quantum systems of ultracold bosons with customized interparticle interactions. Physical Review A, 2013, 88, .	2.5	38
25	Many-body tunneling dynamics of Bose-Einstein condensates and vortex states in two spatial dimensions. Physical Review A, 2015, 92, .	2.5	38
26	Quantum speed limit and optimal control of many-boson dynamics. Physical Review A, 2015, 92, .	2.5	38
27	Demixing of Bosonic Mixtures in Optical Lattices from Macroscopic to Microscopic Scales. Physical Review Letters, 2006, 97, 230403.	7.8	37
28	Many-body theory for systems with particle conversion: Extending the multiconfigurational time-dependent Hartree method. Physical Review A, 2009, 79, .	2.5	37
29	Exact decay and tunnelling dynamics of interacting few-boson systems. Journal of Physics B: Atomic, Molecular and Optical Physics, 2009, 42, 044018.	1.5	36
30	Time-dependent multi-orbital mean-field for fragmented Boseâ€“Einstein condensates. Physics Letters, Section A: General, Atomic and Solid State Physics, 2007, 362, 453-459.	2.1	34
31	Coupled-cluster theory for systems of bosons in external traps. Physical Review A, 2006, 73, .	2.5	32
32	Interferences in the Density of Two Bose-Einstein Condensates Consisting of Identical or Different Atoms. Physical Review Letters, 2007, 98, 110405.	7.8	32
33	Excitation spectra of many-body systems by linear response: General theory and applications to trapped condensates. Physical Review A, 2013, 88, .	2.5	32
34	Generic regimes of quantum many-body dynamics of trapped bosonic systems with strong repulsive interactions. Physical Review A, 2014, 89, .	2.5	32
35	Breaking the resilience of a two-dimensional Bose-Einstein condensate to fragmentation. Physical Review A, 2014, 90, .	2.5	31
36	Uncertainty product of an out-of-equilibrium many-particle system. Physical Review A, 2016, 93, .	2.5	30

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37	Self-consistent fragmented excited states of trapped condensates. Physical Review A, 2004, 70, .	2.5	24
38	Fragmentation of Boseâ€“Einstein condensates in multi-well three-dimensional traps. Physics Letters, Section A: General, Atomic and Solid State Physics, 2005, 347, 88-94.	2.1	24
39	Continuous configuration-interaction for condensates in a ring. Europhysics Letters, 2004, 67, 8-13.	2.0	23
40	Recursive formulation of the multiconfigurational time-dependent Hartree method for fermions, bosons and mixtures thereof in terms of one-body density operators. Chemical Physics, 2012, 401, 2-14.	1.9	23
41	Efficient generation and properties of mesoscopic quantum superposition states in an attractive Boseâ€“Einstein condensate threaded by a potential barrier. Journal of Physics B: Atomic, Molecular and Optical Physics, 2009, 42, 091004.	1.5	21
42	Optimal time-dependent lattice models for nonequilibrium dynamics. New Journal of Physics, 2011, 13, 043003.	2.9	21
43	Controlling the velocities and the number of emitted particles in the tunneling to open space dynamics. Physical Review A, 2014, 89, .	2.5	21
44	Fragmented Metastable States Exist in an Attractive Bose-Einstein Condensate for Atom Numbers Well above the Critical Number of the Gross-Pitaevskii Theory. Physical Review Letters, 2008, 100, 040402.	7.8	19
45	Solvable model of a trapped mixture of Boseâ€“Einstein condensates. Chemical Physics, 2017, 482, 362-373.	1.9	17
46	Variance of an anisotropic Bose-Einstein condensate. Chemical Physics, 2018, 509, 45-54.	1.9	17
47	Fragmented many-body states of definite angular momentum and stability of attractive three-dimensional condensates. Physical Review A, 2010, 82, .	2.5	15
48	Many-body excitations and deexcitations in trapped ultracold bosonic clouds. Physical Review A, 2016, 94, .	2.5	15
49	Properties of fragmented repulsive condensates. Physical Review A, 2005, 71, .	2.5	14
50	Excitation spectra of fragmented condensates by linear response: General theory and application to a condensate in a double-well potential. Physical Review A, 2012, 86, .	2.5	14
51	Dynamics and symmetries of a repulsively bound atom pair in an infinite optical lattice. Physical Review A, 2012, 86, .	2.5	14
52	Multiorbital mean-field approach for bosons, spinor bosons, and Bose-Bose and Bose-Fermi mixtures in real-space optical lattices. Physical Review A, 2007, 76, .	2.5	13
53	Unified view on linear response of interacting identical and distinguishable particles from multiconfigurational time-dependent Hartree methods. Journal of Chemical Physics, 2014, 140, 034108.	3.0	13
54	Foreign and native coordination effects in core-level spectra of mixed Be-Mg clusters. Journal of Chemical Physics, 2002, 117, 3533-3536.	3.0	11

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55	Charge transfer effects in moleculeâ€“negative ion complexes induced by core ionization. Journal of Chemical Physics, 2003, 119, 3051-3062.	3.0	11
56	Elastic scattering of a Bose-Einstein condensate at a potential landscape. Journal of Physics: Conference Series, 2014, 488, 012032.	0.4	11
57	Interatomic response to core ionization of atomic clusters. Chemical Physics Letters, 2001, 339, 263-268.	2.6	10
58	Many-body effects in the excitation spectrum of weakly interacting Bose-Einstein condensates in one-dimensional optical lattices. Physical Review A, 2017, 95, .	2.5	10
59	Build-up of coherence between initially-independent subsystems: The case of Boseâ€“Einstein condensates. Physics Letters, Section A: General, Atomic and Solid State Physics, 2009, 373, 301-304.	2.1	9
60	Exact decay and tunnelling dynamics of interacting few-boson systems. Journal of Physics B: Atomic, Molecular and Optical Physics, 2010, 43, 029802-029802.	1.5	7
61	Interacting fermions and bosons with definite total momentum. Physical Review B, 2005, 71, .	3.2	6
62	Number fluctuations of cold, spatially split bosonic objects. Physical Review A, 2011, 84, .	2.5	6
63	Probing quantum states with momentum boosts. Physical Review A, 2018, 98, .	2.5	6
64	Coupled-cluster theory for bosons in rings and optical lattices. Computational and Theoretical Chemistry, 2006, 768, 151-158.	1.5	5
65	MCTDHB Physics and Technologies: Excitations and Vorticity, Single-Shot Detection, Measurement of Fragmentation, and Optimal Control in Correlated Ultra-Cold Bosonic Many-Body Systems. , 2016, , 23-49.		5
66	Many-Body Effects in Fragmented, Depleted, and Condensed Bosonic Systems in Traps and Optical Cavities by MCTDHB and MCTDH-X. , 2018, , 93-115.		4
67	Numerically-Exact SchrÃ¶dinger Dynamics of Closed and Open Many-Boson Systems with the MCTDHB Package. , 2013, , 81-92.		4
68	Quantum Many-Body Dynamics of Trapped Bosons with the MCTDHB Package: Towards New Horizons with Novel Physics. , 2015, , 63-86.		4
69	Vorticity, Variance, and the Vigor of Many-Body Phenomena in Ultracold Quantum Systems: MCTDHB and MCTDH-X. , 2016, , 79-96.		3