Axel Uâ€j Lode

List of Publications by Year
in descending order

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49 papers	1,094 citations	331670 21 h-index	395702 33 g-index
53 all docs	53 docs citations	53 times ranked	339 citing authors

#	Article	IF	Citations
1	Numerically exact quantum dynamics of bosons with time-dependent interactions of harmonic type. Physical Review A, 2012, 86, .	2.5	92
2	Multiconfigurational time-dependent Hartree method for fermions: Implementation, exactness, and few-fermion tunneling to open space. Physical Review A, 2016, 93, .	2.5	67
3	Colloquium : Multiconfigurational time-dependent Hartree approaches for indistinguishable particles. Reviews of Modern Physics, 2020, 92, .	45.6	67
4	Multiconfigurational time-dependent Hartree method for bosons with internal degrees of freedom: Theory and composite fragmentation of multicomponent Bose-Einstein condensates. Physical Review A, 2016, 93, .	2.5	59
5	Fragmented Superradiance of a Bose-Einstein Condensate in an Optical Cavity. Physical Review Letters, 2017, 118, 013603.	7.8	59
6	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
7	Condensate fragmentation as a sensitive measure of the quantum many-body behavior of bosons with long-range interactions. Physical Review A, 2015, 91, .	2.5	51
8	Wave chaos as signature for depletion of a Bose-Einstein condensate. Physical Review A, 2012, 86, .	2.5	46
9	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
10	Phantom vortices: hidden angular momentum in ultracold dilute Bose-Einstein condensates. Scientific Reports, 2017, 7, 40122.	3.3	36
11	Phases, many-body entropy measures, and coherence of interacting bosons in optical lattices. Physical Review A, 2018, 97, .	2.5	33
12	Excitation spectra of many-body systems by linear response: General theory and applications to trapped condensates. Physical Review A, 2013, 88, .	2.5	32
13	Breaking the resilience of a two-dimensional Bose-Einstein condensate to fragmentation. Physical Review A, 2014, 90, .	2.5	31
14	Many-body entropies, correlations, and emergence of statistical relaxation in interaction quench dynamics of ultracold bosons. Physical Review A, 2015, 92, .	2.5	28
15	Order parameter and detection for a finite ensemble of crystallized one-dimensional dipolar bosons in optical lattices. Physical Review A, 2018, 98, .	2.5	28
16	Resonances and Dynamical Fragmentation in a Stirred Boseâ€“Einstein Condensate. Journal of Low Temperature Physics, 2015, 181, 171-181.	1.4	27
17	Dynamics of Hubbard Hamiltonians with the multiconfigurational time-dependent Hartree method for indistinguishable particles. Physical Review A, 2016, 94, .	2.5	27
18	Correlations of strongly interacting one-dimensional ultracold dipolar few-boson systems in optical lattices. New Journal of Physics, 2019, 21, 033030.	2.9	26

#	Article	IF	Citations
19	MCTDH-X: The multiconfigurational time-dependent Hartree method for indistinguishable particles software. Quantum Science and Technology, 2020, 5, 024004.	5.8	24
20	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
21	Superlattice switching from parametric instabilities in a driven-dissipative Bose-Einstein condensate in a cavity. Physical Review A, 2018, 98, .	2.5	22
22	Controlling the velocities and the number of emitted particles in the tunneling to open space dynamics. Physical Review A, 2014, 89, .	2.5	21
23	Many-body physics in two-component Boseâ€“Einstein condensates in a cavity: fragmented superradiance and polarization. New Journal of Physics, 2018, 20, 055006.	2.9	21
24	Superfluidâ€“Mott-insulator transition of ultracold superradiant bosons in a cavity. Physical Review A, 2019, 100, .	2.5	21
25	Tunneling Dynamics in Open Ultracold Bosonic Systems. Springer Theses, 2015, , .	0.1	21
26	Vortex Reconnections in Anisotropic Trapped Three-Dimensional Boseâ€“Einstein Condensates. Journal of Low Temperature Physics, 2015, 180, 133-143.	1.4	17
27	Interpretable and unsupervised phase classification. Physical Review Research, 2021, 3, .	3.6	15
28	Pathway to chaos through hierarchical superfluidity in blue-detuned cavity-BEC systems. Physical Review A, 2020, 101, .	2.5	13
29	Sorting Fermionization from Crystallization in Many-Boson Wavefunctions. Scientific Reports, 2019, 9, 17873.	3.3	12
30	Elastic scattering of a Bose-Einstein condensate at a potential landscape. Journal of Physics: Conference Series, 2014, 488, 012032.	0.4	11
31	Management of the correlations of UltracoldBosons in triple wells. New Journal of Physics, 2019, 21, 053044.	2.9	10
32	Detecting One-Dimensional Dipolar Bosonic Crystal Orders via Full Distribution Functions. Physical Review Letters, 2020, 125, 093602.	7.8	10
33	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
34	Fidelity and Entropy Production in Quench Dynamics of Interacting Bosons in an Optical Lattice. Quantum Reports, 2019, 1, 304-316.	1.3	7
35	Mott transition in a cavity-boson system: A quantitative comparison between theory and experiment. SciPost Physics, 2021, 11, .	4.9	7
36	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

#	Article	IF	Citations
37	Optimized observable readout from single-shot images of ultracold atoms via machine learning. Physical Review A, 2021, 104, .	2.5	5
38	Many-Body Effects in Fragmented, Depleted, and Condensed Bosonic Systems in Traps and Optical Cavities by MCTDHB and MCTDH-X. , 2018, , 93-115.		4
39	Spectral Structure and Many-Body Dynamics of Ultracold Bosons in a Double-Well. Entropy, 2020, 22, 382.	2.2	4
40	Numerically-Exact SchrÃ¶dinger Dynamics of Closed and Open Many-Boson Systems with the MCTDHB Package. , 2013, , 81-92.		4
41	Quantum Many-Body Dynamics of Trapped Bosons with the MCTDHB Package: Towards New Horizons with Novel Physics. , 2015, , 63-86.		4
42	Vorticity, Variance, and the Vigor of Many-Body Phenomena in Ultracold Quantum Systems: MCTDHB and MCTDH-X. , 2016, , 79-96.		3
43	Crystallization via cavity-assisted infinite-range interactions. Physical Review A, 2022, 106, .	2.5	2
44	Dynamics of Ultracold Bosons in Artificial Gauge Fieldsâ€”Angular Momentum, Fragmentation, and the Variance of Entropy. Entropy, 2021, 23, 392.	2.2	1
45	Tunneling Dynamics of interacting bosons in a quantum seesaw potential. Journal of Physics: Conference Series, 2019, 1290, 012030.	0.4	0
46	Theoretical Considerations and Analytical Models on the Many-Body Physics of Tunneling Bosons. Springer Theses, 2015, , 63-73.	0.1	0
47	Benchmarks with Analytically Solvable Problems. Springer Theses, 2015, , 35-53.	0.1	0
48	Tunneling of a Many-Boson System to Open Space Without a Threshold. Springer Theses, 2015, , 75-88.	0.1	0
49	Theoretical Concepts and Numerical Methods. Springer Theses, 2015, , 9-34.	0.1	0