Vladan VuletiÄ

List of Publications by Year
in descending order

131 papers	15,261 citations	19657 61 h-index	17105 122 g-index
132 all docs	132 docs citations	132 times ranked	8801 citing authors

#	Article	IF	Citations
1	Probing many-body dynamics on a 51-atom quantum simulator. Nature, 2017, 551, 579-584.	27.8	1,463
2	Quantum nonlinear optics with single photons enabled by strongly interacting atoms. Nature, 2012, 488, 57-60.	27.8	679
3	Quantum nonlinear opticsÂâ€"Âphoton by photon. Nature Photonics, 2014, 8, 685-694.	31.4	539
4	Atom-by-atom assembly of defect-free one-dimensional cold atom arrays. Science, 2016, 354, 1024-1027.	12.6	534
5	Quantum phases of matter on a 256-atom programmable quantum simulator. Nature, 2021, 595, 227-232.	27.8	458
6	Nanophotonic quantum phase switch with a single atom. Nature, 2014, 508, 241-244.	27.8	448
7	Efficient All-Optical Switching Using Slow Light within a Hollow Fiber. Physical Review Letters, 2009, 102, 203902.	7.8	412
8	Coupling a Single Trapped Atom to a Nanoscale Optical Cavity. Science, 2013, 340, 1202-1205.	12.6	393
9	Generation and manipulation of SchrÃ¶dinger cat states in Rydberg atom arrays. Science, 2019, 365, 570-574.	12.6	375
10	Cooling of a levitated nanoparticle to the motional quantum ground state. Science, 2020, 367, 892-895.	12.6	367
11	Implementation of Cavity Squeezing of a Collective Atomic Spin. Physical Review Letters, 2010, 104, 073602.	7.8	366
12	Attractive photons in a quantum nonlinear medium. Nature, 2013, 502, 71-75.	27.8	331
13	Parallel Implementation of High-Fidelity Multiqubit Gates with Neutral Atoms. Physical Review Letters, 2019, 123, 170503.	7.8	329
14	A compact grating-stabilized diode laser system for atomic physics. Optics Communications, 1995, 117, 541-549.	2.1	325
15	Quantum Kibbleâ€"Zurek mechanism and critical dynamics on a programmable Rydberg simulator. Nature, 2019, 568, 207-211.	27.8	298
16	Probing topological spin liquids on a programmable quantum simulator. Science, 2021, 374, 1242-1247.	12.6	293
17	Observation of Collective Friction Forces due to Spatial Self-Organization of Atoms: From Rayleigh to Bragg Scattering. Physical Review Letters, 2003, 91, 203001.	7.8	285
18	High-Fidelity Control and Entanglement of Rydberg-Atom Qubits. Physical Review Letters, 2018, 121, 123603.	7.8	274

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19	All-Optical Switch and Transistor Gated by One Stored Photon. Science, 2013, 341, 768-770.	12.6	273
20	States of an Ensemble of Two-Level Atoms with Reduced Quantum Uncertainty. Physical Review Letters, 2010, 104, 073604.	7.8	250
21	Laser Cooling of Atoms, Ions, or Molecules by Coherent Scattering. Physical Review Letters, 2000, 84, 3787-3790.	7.8	232
22	Quantum Simulators: Architectures and Opportunities. PRX Quantum, 2021, 2, .	9.2	229
23	Observation of Cold Collisions between Trapped Ions and Trapped Atoms. Physical Review Letters, 2009, 102, 223201.	7.8	228
24	A quantum processor based on coherent transport of entangled atom arrays. Nature, 2022, 604, 451-456.	27.8	213
25	Beyond Optical Molasses: 3D Raman Sideband Cooling of Atomic Cesium to High Phase-Space Density. Physical Review Letters, 2000, 84, 439-442.	7.8	197
26	Controlling quantum many-body dynamics in driven Rydberg atom arrays. Science, 2021, 371, 1355-1359.	12.6	186
27	Degenerate Raman Sideband Cooling of Trapped Cesium Atoms at Very High Atomic Densities. Physical Review Letters, 1998, 81, 5768-5771.	7.8	180
28	A High-Brightness Source of Narrowband, Identical-Photon Pairs. Science, 2006, 313, 74-77.	12.6	171
29	Crystallization of strongly interacting photons in a nonlinear optical fibre. Nature Physics, 2008, 4, 884-889.	16.7	170
30	Entanglement with negative Wigner function of almost 3,000 atoms heralded by one photon. Nature, 2015, 519, 439-442.	27.8	170
31	Coherence and Raman Sideband Cooling of a Single Atom in an Optical Tweezer. Physical Review Letters, 2013, 110, 133001.	7.8	166
32	Observation of Low-Field Feshbach Resonances in Collisions of Cesium Atoms. Physical Review Letters, 1999, 82, 1406-1409.	7.8	160
33	Dissipative Preparation of Spin Squeezed Atomic Ensembles in a Steady State. Physical Review Letters, 2013, 110, 120402.	7.8	139
34	Orientation-Dependent Entanglement Lifetime in a Squeezed Atomic Clock. Physical Review Letters, 2010, 104, 250801.	7.8	137
35	Interfacing Collective Atomic Excitations and Single Photons. Physical Review Letters, 2007, 98, 183601.	7.8	133
36	Quantum optimization of maximum independent set using Rydberg atom arrays. Science, 2022, 376, 1209-1215.	12.6	124

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37	Micromotion-Induced Limit to Atom-Ion Sympathetic Cooling in Paul Traps. Physical Review Letters, 2012, 109, 253201.	7.8	121
38	Efficient fiber-optical interface for nanophotonic devices. Optica, 2015, 2, 70.	9.3	119
39	Entanglement on an optical atomic-clock transition. Nature, 2020, 588, 414-418.	27.8	118
40	Vacuum-Induced Transparency. Science, 2011, 333, 1266-1269.	12.6	117
41	Squeezing the collective spin of a dilute atomic ensemble by cavity feedback. Physical Review A, 2010, 81, .	2.5	114
42	Cavity Cooling of a Levitated Nanosphere by Coherent Scattering. Physical Review Letters, 2019, 122, 123602.	7.8	111
43	High Resolution Feshbach Spectroscopy of Cesium. Physical Review Letters, 2000, 85, 2717-2720.	7.8	106
44	Tuning friction atom-by-atom in an ion-crystal simulator. Science, 2015, 348, 1115-1118.	12.6	101
45	Cavity Sideband Cooling of a Single Trapped Ion. Physical Review Letters, 2009, 103, 103001.	7.8	99
46	Observation of three-photon bound states in a quantum nonlinear medium. Science, 2018, 359, 783-786.	12.6	99
47	All solid state laser source for tunable blue and ultraviolet radiation. Applied Physics Letters, 1995, 66, 2318-2320.	3.3	98
48	Trapping and Manipulation of Isolated Atoms Using Nanoscale Plasmonic Structures. Physical Review Letters, 2009, 103, 123004.	7.8	96
49	Three-dimensional cavity Doppler cooling and cavity sideband cooling by coherent scattering. Physical Review A, 2001, 64, .	2.5	94
50	Integrating Neural Networks with a Quantum Simulator for State Reconstruction. Physical Review Letters, 2019, 123, 230504.	7.8	90
51	On-Demand Superradiant Conversion of Atomic Spin Gratings into Single Photons with High Efficiency. Physical Review Letters, 2005, 95, 133601.	7.8	82
52	Single-photon bus connecting spin-wave quantum memories. Nature Physics, 2007, 3, 765-769.	16.7	80
53	Interaction between Atomic Ensembles and Optical Resonators. Advances in Atomic, Molecular and Optical Physics, 2011, 60, 201-237.	2.3	79
54	Optomechanical Cavity Cooling of an Atomic Ensemble. Physical Review Letters, 2011, 107, 143005.	7.8	78

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55	Laser-cooled atoms inside a hollow-core photonic-crystal fiber. Physical Review A, 2011, 83, .	2.5	70
56	Near-Unitary Spin Squeezing in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mmultiscripts><mml:mrow><mml:mi>Yb</mml:mi></mml:mrow><mml:mprescripts /><mml:none /><mml:mrow><mml:mn>171</mml:mn></mml:mrow></mml:mmultiscripts></mml:mrow></mml:math>. Physical Review Letters, 2019, 122, 223203.	7.8	68
57	Creation of a Bose-condensed gas of ⁸⁷ Rb by laser cooling. Science, 2017, 358, 1078-1080.	12.6	67
58	Evidence for Nonlinear Isotope Shift in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msup><mml:mrow><mml:mi>Yb</mml:mi></mml:mrow><mml:mrow><mml:mo>+</mml:mo></mml:mrow> Search for New Boson. Physical Review Letters, 2020, 125, 123002.	7.8	67
59	Strong Coupling of Two Individually Controlled Atoms via a Nanophotonic Cavity. Physical Review Letters, 2020, 124, 063602.	7.8	66
60	Observation of Aubry-type transition in finite atom chains via friction. Nature Materials, 2016, 15, 717-721.	27.5	65
61	Symmetry-protected collisions between strongly interacting photons. Nature, 2017, 542, 206-209.	27.8	65
62	Large conditional single-photon cross-phase modulation. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 9740-9744.	7.1	63
63	Collective State Measurement of Mesoscopic Ensembles with Single-Atom Resolution. Physical Review Letters, 2012, 109, 133603.	7.8	60
64	Velocity tuning of friction with two trapped atoms. Nature Physics, 2015, 11, 915-919.	16.7	59
65	Carving Complex Many-Atom Entangled States by Single-Photon Detection. Physical Review Letters, 2015, 115, 250502.	7.8	55
66	Generating Entanglement and Squeezed States of Nuclear Spins in Quantum Dots. Physical Review Letters, 2011, 107, 206806.	7.8	53
67	Direct Laser Cooling to Bose-Einstein Condensation in a Dipole Trap. Physical Review Letters, 2019, 122, 203202.	7.8	53
68	Entanglement transport and a nanophotonic interface for atoms in optical tweezers. Science, 2021, 373, 1511-1514.	12.6	52
69	Measurement of cesium resonance line self-broadening and shift with doppler-free selective reflection spectroscopy. Optics Communications, 1993, 99, 185-190.	2.1	46
70	Suppression of Atomic Radiative Collisions by Tuning the Ground State Scattering Length. Physical Review Letters, 1999, 83, 943-946.	7.8	45
71	Microscopic Magnetic Quadrupole Trap for Neutral Atoms with Extreme Adiabatic Compression. Physical Review Letters, 1998, 80, 1634-1637.	7.8	44
72	One-dimensional array of ion chains coupled to an optical cavity. New Journal of Physics, 2013, 15, 053001.	2.9	41

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73	Single-Atom Heat Machines Enabled by Energy Quantization. Physical Review Letters, 2018, 120, 170601.	7.8	41
74	Squeezing on Momentum States for Atom Interferometry. Physical Review Letters, 2018, 120, 033601.	7.8	40
75	Time-reversal-based quantum metrology with many-body entangled states. Nature Physics, 2022, 18, 925-930.	16.7	40
76	Suppression of Ion Transport due to Long-Lived Subwavelength Localization by an Optical Lattice. Physical Review Letters, 2013, 111, 163002.	7.8	39
77	Design for a compact tunable Ti:sapphire laser. Optics Letters, 1995, 20, 297.	3.3	36
78	Unitary cavity spin squeezing by quantum erasure. Physical Review A, 2012, 85, .	2.5	36
79	Effective Field Theory for Rydberg Polaritons. Physical Review Letters, 2016, 117, 113601.	7.8	35
80	When superatoms talk photons. Nature Physics, 2006, 2, 801-802.	16.7	30
81	Entangled collective-spin states of atomic ensembles under nonuniform atom-light interaction. Physical Review A, 2015, 92, .	2.5	29
82	Quantum Network of Atom Clocks: A Possible Implementation with Neutral Atoms. Physical Review Letters, 2016, 117, 060506.	7.8	29
83	Cavity Cooling of Many Atoms. Physical Review Letters, 2017, 118, 183601.	7.8	26
84	Repulsive photons in a quantum nonlinear medium. Nature Physics, 2020, 16, 921-925.	16.7	26
85	Steep magnetic trap for ultra cold atoms. Europhysics Letters, 1996, 36, 349-354.	2.0	25
86	Long-external-cavity distributed Bragg reflector laser with subkilohertz intrinsic linewidth. Optics Letters, 2012, 37, 1989.	3.3	25
87	Generating entangled spin states for quantum metrology by single-photon detection. Physical Review A, 2013, 88, .	2.5	25
88	Fast Preparation and Detection of a Rydberg Qubit Using Atomic Ensembles. Physical Review Letters, 2021, 127, 050501.	7.8	25
89	Preventing and reversing vacuum-induced optical losses in high-finesse tantalum (V) oxide mirror coatings. Optics Express, 2015, 23, 18014.	3.4	22
90	Two-axis-twisting spin squeezing by multipass quantum erasure. Physical Review A, 2017, 96, .	2.5	22

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91	Collective Spin-Light and Light-Mediated Spin-Spin Interactions in an Optical Cavity. PRX Quantum, 2022, 3, .	9.2	20
92	Optical pumping saturation effect in selective reflection. Optics Communications, 1994, 108, 77-83.	2.1	19
93	Impact of non-unitary spin squeezing on atomic clock performance. New Journal of Physics, 2018, 20, 103019.	2.9	19
94	A broad emitter diode laser system for lithium spectroscopy. Applied Physics B: Lasers and Optics, 1998, 67, 163-166.	2.2	17
95	Technologies for trapped-ion quantum information systems. Quantum Information Processing, 2016, 15, 5351-5383.	2.2	17
96	Geometrically asymmetric optical cavity for strong atom-photon coupling. Physical Review A, 2019, 99, .	2.5	17
97	Fast entanglement distribution with atomic ensembles and fluorescent detection. Physical Review A, 2010, 81, .	2.5	16
98	Evidence of Two-Source King Plot Nonlinearity in Spectroscopic Search for New Boson. Physical Review Letters, 2022, 128, 163201.	7.8	16
99	Collective light forces on atoms in resonators. Journal of Physics B: Atomic, Molecular and Optical Physics, 2005, 38, S605-S615.	1.5	15
100	Any-To-Any Connected Cavity-Mediated Architecture for Quantum Computing with Trapped Ions or Rydberg Arrays. PRX Quantum, 2022, 3, .	9.2	15
101	Partially Nondestructive Continuous Detection of Individual Traveling Optical Photons. Physical Review Letters, 2016, 116, 033602.	7.8	14
102	Multi-layer atom chips for atom tunneling experiments near the chip surface. Sensors and Actuators A: Physical, 2011, 165, 101-106.	4.1	12
103	Two-color magneto-optical trap with small magnetic field for ytterbium. Journal of Physics B: Atomic, Molecular and Optical Physics, 2015, 48, 155302.	1.5	12
104	Passive intrinsic-linewidth narrowing of ultraviolet extended-cavity diode laser by weak optical feedback. Optics Express, 2014, 22, 11592.	3.4	11
105	Strongly Correlated Quantum Gas Prepared by Direct Laser Cooling. Physical Review Letters, 2019, 123, 173401.	7.8	11
106	Note: Fast compact laser shutter using a direct current motor and three-dimensional printing. Review of Scientific Instruments, 2015, 86, 126105.	1.3	10
107	Multislip Friction with a Single Ion. Physical Review Letters, 2017, 119, 043601.	7.8	10
108	Switching and Counting With Atomic Vapors in Photonic-Crystal Fibers. IEEE Journal of Selected Topics in Quantum Electronics, 2012, 18, 1747-1753.	2.9	9

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109	Kinks and nanofriction: Structural phases in few-atom chains. Physical Review Research, 2020, 2, .	3.6	9
110	Extreme Spin Squeezing via Optimized One-Axis Twisting and Rotations. Physical Review Applied, 2022, 17, .	3.8	9
111	Cross Modulation of Two Laser Beams at the Individual-Photon Level. Physical Review Letters, 2014, 113, 113603.	7.8	8
112	Dispersive optical systems for scalable Raman driving of hyperfine qubits. Physical Review A, 2022, 105, .	2.5	8
113	High precision Feshbach spectroscopy of ultracold cesium collisions. Nuclear Physics A, 2001, 684, 641-645.	1.5	7
114	An almost lightless laser. Nature, 2012, 484, 43-44.	27.8	7
115	Generation of cylindrically symmetric magnetic fields with permanent magnets and Âµ-metal. Applied Physics B: Lasers and Optics, 1994, 59, 195-201.	2.2	6
116	Trapping <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mmultiscripts><mml:mi>Yb</mml:mi><mml:mprescripts /><mml:none /><mml:mn>171</mml:mn></mml:mmultiscripts></mml:math> atoms into a one-dimensional optical lattice with a small waist. Physical Review A, 2020, 102, .	2.5	4
117	Heralded Interaction Control between Quantum Systems. Physical Review Letters, 2020, 124, 223602.	7.8	4
118	Quantum effects in the Aubry transition. Physical Review Research, 2021, 3, .	3.6	4
119	Robust kHz-linewidth distributed Bragg reflector laser with optoelectronic feedback. Optics Express, 2019, 27, 37714.	3.4	4
120	Bichromatic frequency conversion in potassium niobate. Optics Letters, 1998, 23, 436.	3.3	3
121	Bose-Einstein interferometry and its applications to precision undersea navigation. , 2008, , .		3
122	Proposal for Observation of a Hidden Nuclear Population Inversion. Hyperfine Interactions, 2002, 143, 7-11.	0.5	2
123	Amplified by randomness. Nature Physics, 2013, 9, 325-326.	16.7	2
124	Entangled quartet. Nature, 2010, 468, 384-385.	27.8	1
125	Strictly nonclassical behavior of a mesoscopic system. Physical Review A, 2017, 95, .	2.5	1
126	CONTROLLED ATOM-MOLECULE INTERACTIONS IN ULTRACOLD GASES. Modern Physics Letters A, 2003, 18, 398-401.	1.2	0

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127	Microchips for single atom detection and spin squeezing. , 2007, , .		0
128	Producing squeezed input states for an atomic clock using an optical cavity. , 2009, , .		0
129	Vacuum-induced transparency. , 2011, , .		0
130	Little big photon. Europhysics News, 2015, 46, 18-21.	0.3	0
131	SPIN SQUEEZING ON AN ATOMIC-CLOCK TRANSITION. , 2009, , .		0