

# Carlo Gabbanini

## List of Publications by Year in descending order

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96  
papers

3,027  
citations

346980

22  
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182931

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all docs

96  
docs citations

96  
times ranked

4820  
citing authors

#	ARTICLE	IF	CITATIONS
1	Dimensional Crossover in the Superfluid-Supersolid Quantum Phase Transition. <i>Physical Review X</i> , 2022, 12, .	2.8	21
2	Evidence of superfluidity in a dipolar supersolid from nonclassical rotational inertia. <i>Science</i> , 2021, 371, 1162-1165.	6.0	54
3	Beam dynamics corrections to the Run-1 measurement of the muon anomalous magnetic moment at Fermilab. <i>Physical Review Accelerators and Beams</i> , 2021, 24, .	0.6	32
4	Magnetic-field measurement and analysis for the Muon $g-2$ Experiment at Fermilab. <i>Physical Review A</i> , 2021, 103, .	0.6	54
5	Measurement of the Positive Muon Anomalous Magnetic Moment to 0.46 ppm. <i>Physical Review Letters</i> , 2021, 126, 141801.	2.9	991
6	Measurement of the anomalous precession frequency of the muon in the Fermilab Muon $g-2$ Experiment. <i>Physical Review D</i> , 2021, 103, non-commutative.	1.6	105
7	Measurement of the muon anomalous magnetic moment with a $g-2$ experiment at Fermilab. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2021, 1011, 165597.	0.7	5
8	Magnetic induction imaging with a cold-atom radio frequency magnetometer. <i>Applied Physics Letters</i> , 2020, 117, .	1.5	8
9	An approach to light distribution for the calibration of high energy physics calorimeters. <i>Journal of Instrumentation</i> , 2020, 15, P09014-P09014.	0.5	0
10	Design and Performance of Data Acquisition and Control System for the Muon $g-2$ Laser Calibration. <i>IEEE Transactions on Nuclear Science</i> , 2020, 67, 832-839.	1.2	1
11	Supersolid symmetry breaking from compressional oscillations in a dipolar quantum gas. <i>Nature</i> , 2019, 574, 382-385.	13.7	140
12	Observation of a Dipolar Quantum Gas with Metastable Supersolid Properties. <i>Physical Review Letters</i> , 2019, 122, 130405.	2.9	288
13	The laser-based gain monitoring system of the calorimeters in the Muon $g-2$ experiment at Fermilab. <i>Journal of Instrumentation</i> , 2019, 14, P11025-P11025.	0.5	14
14	Performance of the Muon $g-2$ calorimeter and readout systems measured with test beam data. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2019, 945, 162558.	0.7	10
15	Muon $g-2$ calibration system data flow. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2019, 936, 335-336.	0.7	0
16	The calibration system of the Muon $g-2$ experiment. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2019, 936, 98-101.	0.7	0
17	The monitoring electronics of the laser calibration system in the Muon $g-2$ experiment. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2019, 936, 372-373.	0.7	2
18	The laser control of the muon $g-2$ experiment at Fermilab. <i>Journal of Instrumentation</i> , 2018, 13, T02009-T02009.	0.5	7

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19	Dysprosium dipolar Bose-Einstein condensate with broad Feshbach resonances. <i>Physical Review A</i> , 2018, 97, .	1.0	28
20	Electron beam test of key elements of the laser-based calibration system for the muon g - 2 experiment. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2017, 842, 86-91.	0.7	14
21	Geant4 simulations of the lead fluoride calorimeter. <i>Nuclear Instruments &amp; Methods in Physics Research B</i> , 2017, 402, 256-262.	0.6	3
22	Design and performance of SiPM-based readout of $\text{PbF}_2$ crystals for high-rate, precision timing applications. <i>Journal of Instrumentation</i> , 2017, 12, P01009-P01009.	0.5	22
23	The Fermilab Muon g-2 experiment: laser calibration system. <i>Journal of Instrumentation</i> , 2017, 12, C08019-C08019.	0.5	2
24	A new setup for experiments with ultracold dysprosium atoms. <i>European Physical Journal: Special Topics</i> , 2017, 226, 2775-2780.	1.2	8
25	The calibration system of the new $g-2$ experiment at Fermilab. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2016, 824, 716-717.	0.7	7
26	The calorimeter system of the new muon g-2 experiment at Fermilab. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2016, 824, 718-720.	0.7	2
27	<a href="#">http://www.w3.org/1998/Math/MathML" altimg="si0009.gif" overflow="scroll"&gt;&lt;mml:mo stretchy="false"&gt;&lt;/mml:mo&gt;&lt;mml:mi&gt;g&lt;/mml:mi&gt;&lt;mml:mo&gt;^2&lt;/mml:mo&gt;&lt;mml:mn&gt;2&lt;/mml:mn&gt;&lt;mml:mo&gt;Tj ETQq1 1 0.784314</a> in <i>Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2016, 824, 718-720.	0.7	12
28	Studies of an array of $\text{PbF}_2$ Cherenkov crystals with large-area SiPM readout. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2015, 783, 12-21.	0.7	36
29	Experimental study of the formation of ultracold RbCs molecules by short-range photoassociation. <i>Physical Review A</i> , 2013, 87, .	1.0	20
30	Formation of ultracold RbCs molecules by photoassociation. <i>Laser Physics</i> , 2012, 22, 1502-1512.	0.6	20
31	Enhancement of Raman scattering by parametric mixing of the pump with its harmonic. <i>Optics Communications</i> , 2012, 285, 3312-3315.	1.0	5
32	Formation of ultracold metastable RbCs molecules by short-range photoassociation. <i>Physical Chemistry Chemical Physics</i> , 2011, 13, 18905.	1.3	41
33	The focusing effect on the angular distribution of the Raman antiStokes branch emissions. <i>Optics Communications</i> , 2011, 284, 4667-4672.	1.0	0
34	Origin of backward to forward wave dominance in broadband Raman scattering in hydrogen. <i>Optics Communications</i> , 2011, 284, 441-445.	1.0	3
35	A multilens Raman cell as a tool to obtain high optical quality and efficient 1st Stokes backward conversion. <i>Optics Communications</i> , 2010, 283, 2268-2271.	1.0	1
36	Photoionization spectroscopy of excited states of cold caesium dimers. <i>Molecular Physics</i> , 2010, 108, 2355-2368.	0.8	11

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37	Analysis of the 2nd Stokes wave generation through stimulated Raman scattering in hydrogen gas under four-wave mixing conditions. <i>Optics Communications</i> , 2009, 282, 2954-2959.	1.0	4
38	The formation and interactions of cold and ultracold molecules: new challenges for interdisciplinary physics. <i>Reports on Progress in Physics</i> , 2009, 72, 086401.	8.1	159
39	Experimental evidence for an isotopic effect in the formation of ultracold ground-state rubidium dimers. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2007, 40, 3283-3293.	0.6	15
40	A DFB diode laser for monitoring and repumping a barium metastable state. <i>Laser Physics Letters</i> , 2007, 4, 117-120.	0.6	4
41	Formation, detection and trapping of ultracold Rb <sub>2</sub> molecules. <i>Nuclear Physics A</i> , 2007, 790, 757c-761c.	0.6	5
42	Assessments of lifetimes and photoionization cross-sections at 10.6 $\mu$ m of nd Rydberg states of Rb measured in a magneto-optical trap. <i>Spectrochimica Acta, Part B: Atomic Spectroscopy</i> , 2006, 61, 196-199.	1.5	6
43	Detection by two-photon ionization and magnetic trapping of cold Rb <sub>2</sub> triplet state molecules. <i>European Physical Journal D</i> , 2006, 39, 261-269.	0.6	47
44	Atomic lithography with barium atoms. <i>Applied Surface Science</i> , 2005, 248, 196-199.	3.1	15
45	Patterning nonanethiol protected gold films by barium atoms. <i>Applied Physics B: Lasers and Optics</i> , 2004, 79, 539-542.	1.1	5
46	An optical trap for cold rubidium molecules. <i>Optics Communications</i> , 2004, 243, 203-208.	1.0	15
47	Ultra-Cold Molecules. <i>Physica Scripta</i> , 2004, T112, 13.	1.2	5
48	Time-dependent radiative transfer in magneto-optical traps. <i>Physical Review A</i> , 2003, 68, .	1.0	4
49	Line-shape study of two-color three-photon ionization of Rb atoms. <i>Physical Review A</i> , 2002, 66, .	1.0	0
50	Determination of the <sup>87</sup> Rb 5p state dipole matrix element and radiative lifetime from the photoassociation spectroscopy of the Rb 2 $\sigma^+$ (P <sub>3/2</sub> ) long-range state. <i>Physical Review A</i> , 2002, 66, .	1.0	65
51	Making Molecules From Laser-Cooled Atoms. , 2002, , 181-200.		1
52	Cold rubidium molecule formation through photoassociation: A spectroscopic study of the 0g-long-range state of <sup>87</sup> Rb 2. <i>European Physical Journal D</i> , 2001, 15, 189-198.	0.6	51
53	Laser cooling and photoionization of alkali atoms. <i>Applied Surface Science</i> , 2000, 154-155, 527-535.	3.1	6
54	Ion processes in the photoionization of laser cooled alkali atoms. <i>Optics Communications</i> , 2000, 173, 223-232.	1.0	10

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55	Cold Rubidium Molecules Formed in a Magneto-Optical Trap. <i>Physical Review Letters</i> , 2000, 84, 2814-2817.	2.9	167
56	Water vapor overtones pressure line broadening and shifting measurements. <i>European Physical Journal D</i> , 2000, 8, 223-226.	0.6	39
57	Resonance-enhanced ionization spectroscopy of laser-cooled rubidium atoms. <i>Measurement Science and Technology</i> , 1999, 10, 772-776.	1.4	3
58	Coherent population trapping studied through energy transfer and energy-pooling collisions. <i>Optics Communications</i> , 1999, 160, 75-79.	1.0	2
59	Experimental study of Velocity Changing Collisions on Coherent Population Trapping in sodium. <i>European Physical Journal D</i> , 1999, 6, 127-131.	0.6	5
60	On the measurement of pressure induced shift by diode lasers and harmonic detection. <i>Optics Communications</i> , 1998, 147, 55-60.	1.0	7
61	Photoionization cross sections for excited laser-cooled cesium atoms. <i>Physical Review A</i> , 1998, 57, R4110-R4113.	1.0	36
62	Partial photoionization cross section measurement in a Rb magneto-optical trap. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 1998, 31, 4143-4148.	0.6	18
63	Scaling laws in magneto-optical traps. <i>Europhysics Letters</i> , 1997, 37, 251-256.	0.7	13
64	Photoionization cross section measurement in a Rb vapor cell trap. <i>Optics Communications</i> , 1997, 141, 25-28.	1.0	41
65	Optical spectroscopy of trapped neutral atoms. <i>Rivista Del Nuovo Cimento</i> , 1997, 20, 1-37.	2.0	2
66	Diode laser spectroscopy of overtone bands of acetylene. <i>Applied Physics B: Lasers and Optics</i> , 1996, 63, 277-282.	1.1	30
67	The sticking coefficient of barium on a MgO substrate measured by laser induced fluorescence. <i>Applied Physics Letters</i> , 1995, 67, 715-717.	1.5	1
68	Collisional processes of laser excited Ca with noble gases. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 1994, 27, 4643-4651.	0.6	3
69	Diode laser spectroscopy of ammonia overtone transitions. <i>Nuovo Cimento Della Societa Italiana Di Fisica D - Condensed Matter, Atomic, Molecular and Chemical Physics, Biophysics</i> , 1994, 16, 117-126.	0.4	4
70	A beam of laser-cooled lithium Rydberg atoms for precision microwave spectroscopy. <i>Optics Communications</i> , 1993, 101, 342-346.	1.0	11
71	Toward a Rydberg constant measurement on circular atoms. <i>IEEE Transactions on Instrumentation and Measurement</i> , 1993, 42, 331-334.	2.4	12
72	Diode laser spectroscopy of methane overtone transitions. <i>Applied Optics</i> , 1993, 32, 5211.	2.1	21

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73	Light-induced drift: last issues. , 1993, , .		0
74	Diode laser overtone spectroscopy: a possible atmospheric monitoring technique. , 1993, 1711, 271.		2
75	Self-quenching mechanism in caesium Rydberg states. Journal of Physics B: Atomic, Molecular and Optical Physics, 1992, 25, 3145-3154.	0.6	4
76	White-Light-Induced Drift on Sodium Vapour. Europhysics Letters, 1992, 17, 309-314.	0.7	4
77	Excitation of inner-shell electrons by energy-pooling collisions. Physical Review A, 1992, 46, R9-R12.	1.0	11
78	Light-induced vapor jets. Physical Review A, 1992, 46, R3601-R3604.	1.0	5
79	Atom cooling by white light. Applied Physics B, Photophysics and Laser Chemistry, 1992, 54, 428-433.	1.5	22
80	Electronic energy transfer in a dense level system. Journal of Quantitative Spectroscopy and Radiative Transfer, 1992, 47, 103-112.	1.1	4
81	Wall effects on light-induced drift. Optics Communications, 1992, 88, 341-346.	1.0	20
82	Observation of a new near-red band of the NaCs molecule. Physics Letters, Section A: General, Atomic and Solid State Physics, 1991, 159, 266-270.	0.9	3
83	Diode laser spectroscopy: Water vapour detection in the atmosphere. Nuovo Cimento Della Societa Italiana Di Fisica D - Condensed Matter, Atomic, Molecular and Chemical Physics, Biophysics, 1991, 13, 677-685.	0.4	5
84	Na-Cs Hornbeck-Molnar ionization. Journal of Physics B: Atomic, Molecular and Optical Physics, 1991, 24, 3807-3814.	0.6	6
85	Associative ionization in collisions between Na(3P <sub>3/2</sub> ) and Cs(6P <sub>3/2</sub> ). Physical Review A, 1991, 43, 2311-2315.	1.0	5
86	Vapor drift induced by resonance radiation pressure. Physical Review A, 1991, 43, 5005-5011.	1.0	7
87	Observation of 3D Light-Induced Drift in a Spherical Cell. Europhysics Letters, 1990, 11, 207-212.	0.7	3
88	Energy Pooling Collisions: A Step Towards Ionization. NATO ASI Series Series B: Physics, 1990, , 373-382.	0.2	0
89	Light-induced drift dynamics in an optically thin regime: Monochromatic and broadband laser excitations. Physical Review A, 1989, 40, 6349-6353.	1.0	16
90	Energy-pooling collisions for K(4P)+Rb(5P) and Na(3P)+Rb(5P) heteronuclear systems. Physical Review A, 1989, 39, 6148-6153.	1.0	31

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91	Light Induced Drift in a spherical cell. , 1989, , 44-45.		0
92	Light-Induced Drift by Nonmonochromatic Laser Radiation. Europhysics Letters, 1988, 7, 505-510.	0.7	15
93	Dynamic behavior of bistability in a laser with a saturable absorber. Journal of the Optical Society of America B: Optical Physics, 1987, 4, 892.	0.9	30
94	Infrared CO2 Laser With Intracavity Absorber: Static And Dynamic Nonlinear Behaviour. , 1986, 0667, 234.		3
95	ENERGY-POOLING PROCESSES IN LASER-EXCITED ALKALI VAPORS : AN UPDATE ON EXPERIMENTS. Journal De Physique Colloque, 1985, 46, C1-61-C1-73.	0.2	17
96	Cross-section measurement and theoretical evaluation for the energy-transfer collision $\text{Na}(3P)+\text{Na}(3P)\rightarrow\text{Na}(4F)+\text{Na}(3S)$ . Physical Review A, 1985, 32, 2068-2076.	1.0	15