Daniel Comparat

List of Publications by Year
in descending order

110 papers	4,273 citations	159585 30 h-index	110387 64 g-index
111 all docs	111 docs citations	111 times ranked	2083 citing authors

#	Article	IF	Citations
1	Observation of collective excitation of two individual atoms in the Rydberg blockade regime. Nature Physics, 2009, 5, 115-118.	16.7	668
2	Formation of ColdCs2Molecules through Photoassociation. Physical Review Letters, 1998, 80, 4402-4405.	7.8	499
3	Many-Body Effects in a Frozen Rydberg Gas. Physical Review Letters, 1998, 80, 253-256.	7.8	300
4	Dipole Blockade at FÃ¶rster Resonances in High Resolution Laser Excitation of Rydberg States of Cesium Atoms. Physical Review Letters, 2006, 97, 083003.	7.8	284
5	Dipole blockade in a cold Rydberg atomic sample [Invited]. Journal of the Optical Society of America B: Optical Physics, 2010, 27, A208.	2.1	273
6	Optical Pumping and Vibrational Cooling of Molecules. Science, 2008, 321, 232-234.	12.6	241
7	Proposed antimatter gravity measurement with an antihydrogen beam. Nuclear Instruments & Methods in Physics Research B, 2008, 266, 351-356.	1.4	231
8	Exploring the WEP with a pulsed cold beam of antihydrogen. Classical and Quantum Gravity, 2012, 29, 184009.	4.0	88
9	Laser Cooling of Molecular Anions. Physical Review Letters, 2015, 114, 213001.	7.8	73
10	A moirÃ© deflectometer for antimatter. Nature Communications, 2014, 5, 4538.	12.8	71
11	Long-Range Forces between Cold Atoms. Physical Review Letters, 1999, 82, 1839-1842.	7.8	68
12	Observation of a Resonant Four-Body Interaction in Cold Cesium Rydberg Atoms. Physical Review Letters, 2012, 108, 023005.	7.8	63
13	Laser excitation of the<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>n</mml:mi><mml:mo>=</mml:mo><mml:mn>3</mml:mn></mml:mrow></mml:math> of positronium for antihydrogen production. Physical Review A, 2016, 94, .	2.5	3
14	Experimental versus theoretical rates for photoassociation and for formation of ultracold molecules. IEEE Journal of Quantum Electronics, 2000, 36, 1378-1388.	1.9	58
15	Cooperative Excitation and Many-Body Interactions in a Cold Rydberg Gas. Physical Review Letters, 2012, 109, 053002.	7.8	58
16	Rovibrational Cooling of Molecules by Optical Pumping. Physical Review Letters, 2012, 109, 183001.	7.8	54
17	Efficient positronium laser excitation for antihydrogen production in a magnetic field. Physical Review A, 2008, 78, .	2.5	53
18	Photoassociative Spectroscopy and Formation of Cold Molecules in Cold Cesium Vapor: Trapâ€“Loss Spectrum versus Ion Spectrum. Journal of Molecular Spectroscopy, 1999, 195, 229-235.	1.2	48

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19	Improved LeRoyâ€“Bernstein near-dissociation expansion formula, and prospect for photoassociation spectroscopy. Journal of Chemical Physics, 2004, 120, 1318-1329.	3.0	44
20	Development of nuclear emulsions with <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si0011.gif" overflow="scroll"><mml:mn>1</mml:mn><mml:mspace width="0.25em" /><mml:mi mathvariant="normal">Î¼<mml:mi mathvariant="normal">m</mml:mi></mml:math> spatial resolution for the AEgIS experiment. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2013, 732, 325-329.	1.6	43
21	Coherent excitation of a single atom to a Rydberg state. Physical Review A, 2010, 82, .	2.5	42
22	High-flux monochromatic ion and electron beams based on laser-cooled atoms. Physical Review A, 2013, 88, .	2.5	41
23	Photoassociative Spectroscopy as a Self-Sufficient Tool for the Determination of the Cs Triplet Scattering Length. Physical Review Letters, 2000, 85, 1408-1411.	7.8	39
24	Pulsed production of antihydrogen. Communications Physics, 2021, 4, .	5.3	37
25	Back and Forth Transfer and Coherent Coupling in a Cold Rydberg Dipole Gas. Physical Review Letters, 2005, 95, 233002.	7.8	35
26	Kinetic Monte Carlo modeling of dipole blockade in Rydberg excitation experiment. New Journal of Physics, 2008, 10, 045031.	2.9	35
27	Molecular cooling via Sisyphus processes. Physical Review A, 2014, 89, .	2.5	34
28	Positron bunching and electrostatic transport system for the production and emission of dense positronium clouds into vacuum. Nuclear Instruments & Methods in Physics Research B, 2015, 362, 86-92.	1.4	34
29	Prospects for measuring the gravitational free-fall of antihydrogen with emulsion detectors. Journal of Instrumentation, 2013, 8, P08013-P08013.	1.2	33
30	Ion microscopy based on laser-cooled cesium atoms. Ultramicroscopy, 2016, 164, 70-77.	1.9	33
31	Controlling the formation of cold molecules via a Feshbach resonance. Europhysics Letters, 2003, 64, 171-177.	2.0	28
32	Molecular vibrational cooling by optical pumping with shaped femtosecond pulses. New Journal of Physics, 2009, 11, 055037.	2.9	28
33	Efficient formation of deeply bound ultracold molecules probed by broadband detection. Physical Review A, 2009, 79, .	2.5	26
34	Star cluster dynamics in a laboratory: electrons in an ultracold plasma. Monthly Notices of the Royal Astronomical Society, 2005, 361, 1227-1242.	4.4	24
35	Vibrational cooling of cesium molecules using noncoherent broadband light. Physical Review A, 2009, 80, .	2.5	22
36	Ro-vibrational cooling of molecules and prospects. Journal of Physics B: Atomic, Molecular and Optical Physics, 2015, 48, 182001.	1.5	21

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37	Producing long-lived <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mn>2</mml:mn><mml:msup><mml:mrow><mml:mspace width="0.16em" /></mml:mrow><mml:mn>3</mml:mn></mml:msup><mml:mi>S</mml:mi></mml:mrow></mml:math> positronium via <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mn>3</mml:mn><mml:msup><mml:mrow><mml:mspace	2.5	21
38	AEgIS experiment commissioning at CERN. AIP Conference Proceedings, 2013, , .	0.4	18
39	The AEgIS experiment. Hyperfine Interactions, 2015, 233, 13-20.	0.5	18
40	Deeply bound cold caesium molecules formed after 0âˆ’g resonant coupling. Physical Chemistry Chemical Physics, 2011, 13, 18910.	2.8	17
41	Photodetachment and Doppler laser cooling of anionic molecules. New Journal of Physics, 2018, 20, 023024.	2.9	17
42	Compression of a mixed antiproton and electron non-neutral plasma to high densities. European Physical Journal D, 2018, 72, 1.	1.3	17
43	Velocity-selected production of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mn>2</mml:mn><mml:mmultiscripts><mml:mi mathvariant="normal">S</mml:mi><mml:mprescripts /><mml:none /><mml:mrow><mml:mspace width="0.16em" /><mml:mn>3</mml:mn></mml:mrow></mml:mmultiscripts></mml:mrow></mml:math> metastable positronium. Physical Review A, 2019, 99, .	2.5	17
44	Rydberg decelerator using a travelling electric-field gradient. Journal of Physics B: Atomic, Molecular and Optical Physics, 2005, 38, S409-S419.	1.5	16
45	Formation Of A Cold Antihydrogen Beam in AEGIS For Gravity Measurements. AIP Conference Proceedings, 2008, , .	0.4	16
46	Measuring $ar{g}$ with ${m AEar{g}IS}$, progress and perspectives. International Journal of Modern Physics Conference Series, 2014, 30, 1460262.	0.7	14
47	Cold cesium molecules: from formation to cooling. Journal of Modern Optics, 2009, 56, 2089-2099.	1.3	12
48	Antihydrogen physics: gravitation and spectroscopy in AEgISThis paper was presented at the International Conference on Precision Physics of Simple Atomic Systems, held at Ã‰cole de Physique, les Houches, France, 30 Mayâ€“â€“â€‰4 June, 2010.. Canadian Journal of Physics, 2011, 89, 17-24.	1.1	12
49	Rovibrational optical pumping of a molecular beam. Physical Review A, 2018, 97, .	2.5	12
50	Photoionization spectroscopy of excited states of cold caesium dimers. Molecular Physics, 2010, 108, 2355-2368.	1.7	11
51	Forced field ionization of Rydberg states for the production of monochromatic beams. Physical Review A, 2017, 95, .	2.5	11
52	Field ionization of Rydberg atoms for high-brightness electron and ion beams. Physical Review A, 2017, 95, .	2.5	11
53	Detection of low energy antiproton annihilations in a segmented silicon detector. Journal of Instrumentation, 2014, 9, P06020-P06020.	1.2	10
54	The AEGIS detection system for gravity measurements. Nuclear Physics A, 2010, 834, 751c-753c.	1.5	9

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55	Vibrational cooling of cold molecules with optimised shaped pulses. Molecular Physics, 2010, 108, 795-810.	1.7	9
56	Optical dipole-force cooling of anions in a Penning trap. Physical Review A, 2017, 96, .	2.5	9
57	Real-Time Trajectory Control of Deterministically Produced Ions. Physical Review Applied, 2019, 11, .	3.8	9
58	Stimulated decay and formation of antihydrogen atoms. Physical Review A, 2020, 101, .	2.5	9
59	Controllable interactions between Rydberg atoms and ultracold plasmas. Journal of Physics: Conference Series, 2009, 194, 012066.	0.4	8
60	Laser cooling of rotation and vibration by optical pumping. Molecular Physics, 2013, 111, 1844-1854.	1.7	8
61	AEgIS at ELENA: outlook for physics with a pulsed cold antihydrogen beam. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2018, 376, 20170274.	3.4	8
62	Watt-level narrow-linewidth fibered laser source at 852Ânm for FIB application. Optics Letters, 2018, 43, 3937.	3.3	8
63	A â^¼100â€Î¼m-resolution position-sensitive detector for slow positronium. Nuclear Instruments & Methods in Physics Research B, 2019, 457, 44-48.	1.4	8
64	Ion and electron ghost imaging. Physical Review Research, 2020, 2, .	3.6	8
65	Characterization of a transmission positron/positronium converter for antihydrogen production. Nuclear Instruments & Methods in Physics Research B, 2017, 407, 55-66.	1.4	7
66	The AEgIS experiment at CERN: measuring antihydrogen free-fall in earthâ€™s gravitational field to test WEP with antimatter. Journal of Physics: Conference Series, 2017, 791, 012014.	0.4	7
67	The AEgIS Experiment. Hyperfine Interactions, 2014, 228, 121-131.	0.5	6
68	Direct detection of antiprotons with the Timepix3 in a new electrostatic selection beamline. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2016, 831, 12-17.	1.6	6
69	Extraction dynamics of electrons from magneto-optically trapped atoms. Applied Physics Letters, 2017, 111, 021104.	3.3	6
70	Calibration and Equalisation of Plastic Scintillator Detectors for Antiproton Annihilation Identification Over Positron/Positronium Background. Acta Physica Polonica B, 2020, 51, 213.	0.8	6
71	Broadband Vibrational Cooling of Cold Cesium Molecules: Theory and Experiments. Chinese Journal of Chemical Physics, 2009, 22, 149-156.	1.3	5
72	Broadband lasers to detect and cool the vibration of cold molecules. Faraday Discussions, 2009, 142, 257.	3.2	5

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73	Guided and focused slow atomic beam from a 2 dimensional magneto optical trap. European Physical Journal D, 2014, 68, 1.	1.3	5
74	Particle tracking at cryogenic temperatures: the Fast Annihilation Cryogenic Tracking (FACT) detector for the AEgIS antimatter gravity experiment. Journal of Instrumentation, 2015, 10, C02023-C02023.	1.2	5
75	Positronium Rydberg excitation diagnostic in a 1T cryogenic environment. AIP Conference Proceedings, 2019, , .	0.4	5
76	Laser-stimulated deexcitation of Rydberg antihydrogen atoms. Physical Review A, 2019, 99, .	2.5	5
77	Limitations for field-enhanced atom interferometry. Physical Review A, 2020, 101, .	2.5	5
78	A cryogenic tracking detector for antihydrogen detection in the <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" id="d1e454" altimg="si123.svg"><mml:mtext>AEgIS</mml:mtext></mml:math> experiment. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2020, 960, 163637.	1.6	5
79	Positronium laser cooling in a magnetic field. Physical Review A, 2021, 104, .	2.5	5
80	Measuring the gravitational free-fall of antihydrogen. Hyperfine Interactions, 2014, 228, 151-157.	0.5	4
81	Measurement of antiproton annihilation on Cu, Ag and Au with emulsion films. Journal of Instrumentation, 2017, 12, P04021-P04021.	1.2	4
82	Phase-space-density limitation in laser cooling without spontaneous emission. Physical Review A, 2018, 98, .	2.5	4
83	Imaging a positronium cloud in a 1 Tesla. EPJ Web of Conferences, 2019, 198, 00004.	0.3	4
84	Gravity and antimatter: the AEgIS experiment at CERN. Journal of Physics: Conference Series, 2020, 1342, 012016.	0.4	4
85	Comparison of Planar and 3D Silicon Pixel Sensors Used for Detection of Low Energy Antiprotons. IEEE Transactions on Nuclear Science, 2014, 61, 3747-3753.	2.0	3
86	Pulsed production of cold protonium in Penning traps. Physical Review A, 2019, 100, .	2.5	3
87	Determining a vibrational distribution with a broadband optical source. Physical Chemistry Chemical Physics, 2020, 22, 19864-19869.	2.8	3
88	Induced THz transitions in Rydberg caesium atoms for application in antihydrogen experiments. European Physical Journal D, 2021, 75, 1.	1.3	3
89	Efficient rotational cooling of a cold beam of barium monofluoride. New Journal of Physics, 2022, 24, 025007.	2.9	3
90	Measuring the fall of antihydrogen: the AEgIS experiment at CERN. Physics Procedia, 2011, 17, 49-56.	1.2	2

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91	Development of nuclear emulsions operating in vacuum for the AEgIS experiment. Journal of Instrumentation, 2014, 9, C01061-C01061.	1.2	2
92	Probing antimatter gravity â€“ The AEGIS experiment at CERN. EPJ Web of Conferences, 2016, 126, 02016.	0.3	2
93	Bichromatic magneto-optical trapping forJâ†'J,Jâ€²1configurations. Physical Review A, 2016, 93, .	2.5	2
94	Design for a high resolution electron energy loss microscope. Ultramicroscopy, 2019, 207, 112848.	1.9	2
95	Narrow-band pulsed electron source based on near-threshold photoionization of Cs in a magneto-optical trap. Physical Review A, 2020, 101, .	2.5	2
96	Reflection of Rydberg antihydrogen by surfaces. Physical Review A, 2020, 102, .	2.5	2
97	Comparative analysis of recirculating and collimating cesium ovens. Review of Scientific Instruments, 2022, 93, 043302.	1.3	2
98	High-Flux Monochromatic Electron and Ion Beams from Laser Cooled Atoms. Microscopy and Microanalysis, 2014, 20, 1156-1157.	0.4	1
99	Emulsion detectors for the antihydrogen detection in AEgIS. Hyperfine Interactions, 2015, 233, 29-34.	0.5	1
100	COLDFIB - The New FIB Source from Laser Cooled Atoms. Microscopy and Microanalysis, 2018, 24, 804-805.	0.4	1
101	Cesium Rydberg-state ionization study by three-dimensional ion-electron correlation: Toward a monochromatic electron source. Physical Review A, 2021, 103, .	2.5	1
102	Techniques for Production and Detection of 23S Positronium. Acta Physica Polonica A, 2020, 137, 91-95.	0.5	1
103	Developments for pulsed antihydrogen production towards direct gravitational measurement on antimatter. Physica Scripta, 2020, 95, 114001.	2.5	1
104	Entanglement of two ground state neutral atoms using Rydberg blockade. Optics and Spectroscopy (English Translation of Optika I Spektroskopiya), 2011, 111, 540-546.	0.6	0
105	Antiproton tagging and vertex fitting in a Timepix3 detector. Journal of Instrumentation, 2018, 13, P06004-P06004.	1.2	0
106	Production of long-lived positronium states via laser excitation to 33P level. AIP Conference Proceedings, 2019, , .	0.4	0
107	Protocol for pulsed antihydrogen production in the AEá¸¡IS apparatus. Journal of Physics: Conference Series, 2020, 1612, 012025.	0.4	0
108	Simulation of antihydrogen deexcitation in neutral atom traps for improved trapping and cooling. Journal of Physics B: Atomic, Molecular and Optical Physics, 0, , .	1.5	0

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109	Efficient 2D molasses cooling of a cesium beam using a blue detuned top-hat beam. European Physical Journal D, 2022, 76, 1.	1.3	0
110	A Rydberg hydrogen beam for studies of stimulated deexcitation. EPJ Web of Conferences, 2022, 262, 01002.	0.3	0