Nikolai N Kolachevsky

List of Publications by Year
in descending order

133	2,803	394390	189881
papers	citations	19 h-index	50 g-index

135	135	135	1868
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	New Limits on the Drift of Fundamental Constants from Laboratory Measurements. Physical Review Letters, 2004, 92, 230802.	7.8	376
2	Improved Measurement of the Hydrogen<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mn>1</mml:mn><mml:mi>S</mml:mi><mml:mo>â€“</mml:mo><mml:mn>2</mml:mn><mml:mi>S</mml:mi></ Frequency. Physical Review Letters, 2011, 107, 203001.	7.8	343
3	The Rydberg constant and proton size from atomic hydrogen. Science, 2017, 358, 79-85.	12.6	281
4	Subhertz linewidth diode lasers by stabilization to vibrationally and thermally compensated ultralow-expansion glass Fabry-PÃ©rot cavities. Physical Review A, 2008, 77, .	2.5	225
5	Precision Measurement of the Hydrogen<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mn>1</mml:mn><mml:mi>S</mml:mi><mml:mtext mathvariant="normal">â^’</mml:mtext><mml:mn>2</mml:mn><mml:mi>S</mml:mi></mml:math>Frequency	7.8	169
6	Feasibility of coherent xuv spectroscopy on the<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mn>1</mml:mn><mml:mi>S</mml:mi><mml:mtext>â^’</mml:mtext><mml:mn>2</mml:mn><mml: in singly ionized helium. Physical Review A, 2009, 79, .	2.5	121
7	Precision Measurement of the Hydrogen-Deuterium<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mn>1</mml:mn><mml:mi>S</mml:mi><mml:mo>â^’</mml:mo><mml:mn>2</mml:mn><mml:mi>S</mml:mi></ Shift. Physical Review Letters, 2010, 104, 233001.	7.8	109
8	The GBAR antimatter gravity experiment. Hyperfine Interactions, 2015, 233, 21-27.	0.5	109
9	Magneto-optical trap for thulium atoms. Physical Review A, 2010, 82, .	2.5	80
10	Two-photon excitation dynamics in bound two-body Coulomb systems including ac Stark shift and ionization. Physical Review A, 2006, 73, .	2.5	62
11	Hydrogen-deuterium isotope shift: From the<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mn>1</mml:mn><mml:mi>S</mml:mi><mml:mo>â^’</mml:mo><mml:mn>2</mml:mn><mml:mi frequency to the proton-deuteron charge-radius difference. Physical Review A, 2011, 83, .	2.5	53
12	Precision spectroscopy of hydrogen and femtosecond laser frequency combs. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2005, 363, 2155-2163.	3.4	45
13	Precision spectroscopy of the 2Sâ€4P transition in atomic hydrogen on a cryogenic beam of optically excited 2S atoms. Annalen Der Physik, 2013, 525, 671-679.	2.4	41
14	Measurement of the<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mn>2</mml:mn><mml:mi>S</mml:mi></mml:math>Hyperfine Interval in Atomic Hydrogen. Physical Review Letters, 2009, 102, 213002.	7.8	39
15	Broadband x-ray optical elements based on aperiodic multilayer structures. Quantum Electronics, 2000, 30, 428-434.	1.0	26
16	2Shyperfine structure of atomic deuterium. Physical Review A, 2004, 70, .	2.5	24
17	Quantum Interference Line Shifts of Broad Dipoleâ€Allowed Transitions. Annalen Der Physik, 2019, 531, 1900044.	2.4	22
18	Blue laser cooling transitions in Tm I. Applied Physics B: Lasers and Optics, 2007, 89, 589-594.	2.2	21

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19	Low phase noise diode laser oscillator for 1Sâ€“2S spectroscopy in atomic hydrogen. Optics Letters, 2011, 36, 4299.	3.3	20
20	Secondary laser cooling and capturing of thulium atoms in traps. Quantum Electronics, 2014, 44, 515-520.	1.0	18
21	Active fiber-based retroreflector providing phase-retracing anti-parallel laser beams for precision spectroscopy. Optics Express, 2016, 24, 17470.	3.4	17
22	Compact solid-state laser source for1Sâ^'2Sspectroscopy in atomic hydrogen. Physical Review A, 2006, 73, .	2.5	16
23	Precision spectroscopy of 2Sâ€“nP transitions in atomic hydrogen for a new determination of the Rydberg constant and the proton charge radius. Physica Scripta, 2015, T165, 014030.	2.5	16
24	Simultaneous bicolor interrogation in thulium optical clock providing very low systematic frequency shifts. Nature Communications, 2021, 12, 5171.	12.8	16
25	Fabrication and investigation of imaging normal-incidence multilayer mirrors with a narrow-band reflection in the range l» simeq 4.5 nm. Physica Scripta, 1993, 48, 516-520.	2.5	15
26	Laser cooling of rare-earth atoms and precision measurements. Physics-Uspekhi, 2011, 54, 863-870.	2.2	15
27	Ultracold lanthanides: from optical clock to a quantum simulator. Physics-Uspekhi, 2016, 59, 168-173.	2.2	15
28	Laboratory search for time variation in the fine structure constant. Physics-Uspekhi, 2004, 47, 1101-1118.	2.2	14
29	Laser system for secondary cooling of87Sr atoms. Quantum Electronics, 2012, 42, 1021-1026.	1.0	14
30	Compact Transportable Optical Standard Based on a Single 171Yb+ Ion (â€œYBISâ€•Project). Bulletin of the Lebedev Physics Institute, 2018, 45, 337-340.	0.6	14
31	Resonances of coherent population trapping in samarium vapours. Quantum Electronics, 2001, 31, 61-66.	1.0	13
32	Trapping, retention and laser cooling of Th³⁺ ions in a multisection linear quadrupole trap. Quantum Electronics, 2017, 47, 406-411.	1.0	13
33	Spectroscopy of coherent dark resonances in multilevel atoms for the example of samarium vapor. Journal of Experimental and Theoretical Physics, 2003, 96, 629-642.	0.9	12
34	On the thermal noise limit of ultrastable optical cavities. Quantum Electronics, 2018, 48, 425-430.	1.0	12
35	Optical measurement of the 2S hyperfine interval in atomic hydrogen. Canadian Journal of Physics, 2002, 80, 1225-1231.	1.1	11
36	Spectral parameters of reference-cavity-stabilised lasers. Quantum Electronics, 2008, 38, 391-400.	1.0	11

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37	Zeeman slowing of thulium atoms. Optics Letters, 2009, 34, 2955.	3.3	11
38	Detection of the clock transition (1.14 Î¼m) in ultra-cold thulium atoms. Quantum Electronics, 2015, 45, 482-485.	1.0	11
39	Compact magneto-optical trap of thulium atoms for a transportable optical clock. Optics Express, 2021, 29, 36734-36744.	3.4	11
40	High-precision laser spectroscopy of cold atoms and the search for the drift of the fine structure constant. Physics-Uspekhi, 2008, 51, .	2.2	10
41	Stigmatic high-resolution high-throughput narrow-band diffraction spectrograph employing X-ray multilayer mirrors. Physica Scripta, 1993, 47, 495-500.	2.5	9
42	Coherent excitation of the 5D5/2level of ultra-cold rubidium atoms with short laser pulses. Quantum Electronics, 2012, 42, 714-720.	1.0	9
43	Multiparticle losses in a linear quadrupole Paul trap. Quantum Electronics, 2016, 46, 935-940.	1.0	9
44	Ultrastable laser system for spectroscopy of the 1S0 â€“ 3P0 clock transition in Sr atoms. Quantum Electronics, 2017, 47, 400-405.	1.0	9
45	Broad-band stigmatic spectrograph for the soft x-ray range. Quantum Electronics, 1998, 28, 821-826.	1.0	8
46	Photoionization broadening of the1Sâ^'2Stransition in a beam of atomic hydrogen. Physical Review A, 2006, 74, .	2.5	8
47	Frequency-modulation spectroscopy of coherent dark resonances in 87Rb atoms. Applied Physics B: Lasers and Optics, 2009, 97, 35-46.	2.2	8
48	Short-haul fibre-optic communication link with a phase noise compensation system for optical frequency signal transmission. Quantum Electronics, 2017, 47, 794-797.	1.0	8
49	2.8 km fiber link with phase noise compensation for transportable Yb+ optical clock characterization. Laser Physics, 2018, 28, 105103.	1.2	8
50	Trapping of thulium atoms in a cavity-enhanced optical lattice near a magic wavelength of 814.5 nm. Quantum Electronics, 2018, 48, 415-418.	1.0	8
51	Improved Wavelength Measurement of 2S1/2â†'2P1/2 and 2D3/2â†'3[3/2]1/2 Transitions in Yb+. Journal of Russian Laser Research, 2019, 40, 375-381.	0.6	8
52	Ultrastable Laser System for Spectroscopy of the 1.14 Î¼m Inner-Shell Clock Transition in Tm and Its Absolute Frequency Measurement. Journal of Russian Laser Research, 2019, 40, 540-546.	0.6	8
53	Compact ultrastable laser system for spectroscopy of ²S_{1/2} â†' ²D_{3/2} quadrupole transition in ¹⁷¹Yb⁺ ion. Quantum Electronics, 2020, 50, 850-854.	1.0	8
54	Improved measurement of the hyperfine structure of the laser cooling level $$4f^{12}(^3H_6)5d_{5/2}6s^2$$ 4 f 12 (3 H 6) 5 d 5 / 2 6 s 2 $$(J=9/2)$$ (J = 9 / 2) in $${}^{169}_{,,69}{{mathrm {Tm}}}$$ 69 169 Tm. Applied Physics B: Lasers and Optics, 2015, 121, 275-282.	2.2	7

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55	A new generation of cryogenic high-Q Fabryâ€“Perot resonators for ultrastable lasers. Quantum Electronics, 2017, 47, 421-425.	1.0	7
56	48â€‰-cm-long room-temperature cavities in vertical and horizontal orientations for Sr optical clock. Applied Optics, 2021, 60, 9151.	1.8	7
57	Magnetic trap for thulium atoms. Quantum Electronics, 2011, 41, 765-768.	1.0	6
58	Laser cooling of thulium atoms. Optics and Spectroscopy (English Translation of Optika I) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 622 Td (	0.6	6
59	Precision laser spectroscopy in fundamental studies. Physics-Uspekhi, 2014, 57, 1230-1238.	2.2	6
60	Methods for determining the polarisability of the fine structure levels in the ground state of the thulium atom. Quantum Electronics, 2017, 47, 479-483.	1.0	6
61	Physics of ultracold atoms in Russia: development and co-ordination. Quantum Electronics, 2017, 47, 393-393.	1.0	6
62	Pressure shifts in high-precision hydrogen spectroscopy: II. Impact approximation and Monte-Carlo simulations. Journal of Physics B: Atomic, Molecular and Optical Physics, 2019, 52, 075006.	1.5	6
63	Rabi spectroscopy of the clock transition in thulium atoms in a one-dimensional optical lattice. Quantum Electronics, 2020, 50, 220-224.	1.0	6
64	Proton charge radius. Physics-Uspekhi, 2021, 64, 1038-1048.	2.2	6
65	<title>Characterization of imaging normal-incidence multilayer mirrors for the 40- to 300-Ã... range by spectroscopic techniques using a laser-plasma radiation source</title>. , 1994, 2012, 209.		5
66	Stable diode lasers for hydrogen precision spectroscopy. European Physical Journal: Special Topics, 2008, 163, 89-94.	2.6	5
67	Semiconductor laser with the subhertz linewidth. Quantum Electronics, 2008, 38, 895-902.	1.0	5
68	Selected problems in hydrodynamics, quantum electrodynamics, and laser spectroscopy (Scientific) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 5 Physics-Uspekhi, 2008, 51, 1171-1190.	2.2	5
69	Collimation of a thulium atomic beam by two-dimensional optical molasses. Quantum Electronics, 2013, 43, 374-378.	1.0	5
70	A Compact Second-Harmonic Generator for Tasks of Precision Spectroscopy Within the Range of 240â€“600 nm. Journal of Russian Laser Research, 2016, 37, 440-447.	0.6	5
71	EIT Ground State Cooling Scheme of 171Yb+ Based on the 2S1/2â†'2P1/2 Cooling Transition. Journal of Russian Laser Research, 2018, 39, 568-574.	0.6	5
72	Doppler laser cooling and vibrational spectrum of ²⁴Mg⁺ ions in a linear Paul trap. Quantum Electronics, 2018, 48, 448-452.	1.0	5

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73	Optical pumping of ultracold thulium atoms to a lower level of the clock transition and study of their depolarisation. Quantum Electronics, 2019, 49, 418-423.	1.0	5
74	Temperature drift contribution to frequency instability of silicon Fabryâ€“Perot cavities. Quantum Electronics, 2019, 49, 424-428.	1.0	5
75	Physics of ultracold atoms in Russia: topical research. Quantum Electronics, 2019, 49, 409-409.	1.0	5
76	Pressure shifts in high-precision hydrogen spectroscopy. I. Long-range atomâ€“atom and atomâ€“molecule interactions. Journal of Physics B: Atomic, Molecular and Optical Physics, 2019, 52, 075005.	1.5	5
77	Magic wavelengths near 800 nm for precision spectroscopy of an inner-shell transition in thulium atoms. Quantum Electronics, 2019, 49, 1028-1031.	1.0	5
78	Detection of the clock transition in thulium atoms by using repump laser radiation. Quantum Electronics, 2020, 50, 566-570.	1.0	5
79	Spectroscopy of coherent population trapping with a light source based on a femtosecond laser. Quantum Electronics, 2004, 34, 983-988.	1.0	4
80	Physical and mathematical foundations of the multialternative recognition and identification of hydrolocation fields produced by bodies of complex geometric shapes. Physics-Uspekhi, 2008, 51, .	2.2	4
81	Resonant interaction of femtosecond radiation with a cloud of cold 87Rb atoms. Journal of Experimental and Theoretical Physics, 2009, 109, 359-369.	0.9	4
82	Spectroscopy of intercombination transition1S0â€“3P1for secondary cooling of strontium atoms. Quantum Electronics, 2015, 45, 166-170.	1.0	4
83	On the duration of continuous operation of an optical frequency standard based on strontium atoms. Quantum Electronics, 2018, 48, 431-437.	1.0	4
84	Compensation of residual amplitude modulation fluctuations in an optoelectronic system for laser radiation frequency stabilisation. Quantum Electronics, 2020, 50, 590-594.	1.0	4
85	Frequency transfer via an ultra-stable free-space link. Quantum Electronics, 2020, 50, 267-271.	1.0	4
86	<title>Stigmatic broadband spectroscopic instruments below 300 A</title>. , 1997, , .		3
87	Broad-band laser optical pumping of Rb for the creation of nuclear polarisation in3He. Quantum Electronics, 2000, 30, 81-86.	1.0	3
88	Title is missing!. Journal of Russian Laser Research, 2003, 24, 129-142.	0.6	3
89	Tunable Phase-Coherent Source of the Bichromatic Light Field for the Spectroscopy of Resonances of the Coherent Population Trapping in Rare-Earth Atoms. Journal of Russian Laser Research, 2004, 25, 239-252.	0.6	3
90	The 2s hyperfine structure in hydrogen and deuterium: a precision test of bound state quantum electrodynamics. Canadian Journal of Physics, 2005, 83, 283-292.	1.1	3

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91	2s Hyperfine splitting in light hydrogen-like atoms: Theory and experiment. Journal of Experimental and Theoretical Physics, 2006, 102, 367-379.	0.9	3
92	Testing the Stability of the Fine Structure Constant inÂtheÂLaboratory. Space Science Reviews, 2009, 148, 267-288.	8.1	3
93	Microwave frequency standard on 25Mg+ ions: expected characteristics and prospects. Quantum Electronics, 2017, 47, 426-430.	1.0	3
94	Motional states of laser cooled Yb ions in an optimized radiofrequency trap. Laser Physics, 2019, 29, 095201.	1.2	3
95	Nonselective Paul ion trap loading with a light-emitting diode. Applied Physics Letters, 2019, 115, .	3.3	3
96	Long ULE Cavities with Relative Fractional Frequency Drift Rate below 5 Ã— 10â€“16/s for Laser Frequency Stabilization. Bulletin of the Lebedev Physics Institute, 2020, 47, 257-261.	0.6	3
97	Investigation of the transition at a wavelength of 506 nm, intended for deep cooling of thulium atoms. Quantum Electronics, 2021, 51, 479-483.	1.0	3
98	Physics of ultracold atoms in Russia: current research. Quantum Electronics, 2021, 51, 463-463.	1.0	3
99	Continuous operation of a bicolor thulium optical lattice clock. Applied Physics Express, 0, , .	2.4	3
100	Linear Paul Trap for Quantum Logic Experiments. Bulletin of the Lebedev Physics Institute, 2020, 47, 385-389.	0.6	3
101	Compact High-Finesse ULE Cavities for Laser Frequency Stabilization. Bulletin of the Lebedev Physics Institute, 2021, 48, 295-300.	0.6	3
102	Laser plasma source of polarized monochromatic beams in the XUV around multilayer mirrors. , 1995, , .		2
103	Stigmatic high-resolution high-throughput XUV spectroscopic instruments employing unconventional optical components. , 1995, , .		2
104	Spectral characteristics of multilayer cobaltâ€"carbon mirrors for the Î» â‰ˆ7.5 nm range. Quantum Electronics, 1997, 27, 712-716.	1.0	2
105	Hyperfine structure of the metastable level in hydrogen-like atoms. Quantum Electronics, 2005, 35, 207-218.	1.0	2
106	Study of transitions in thulium atoms in the 410â€“420-nm range for laser cooling. Quantum Electronics, 2008, 38, 961-968.	1.0	2
107	Physics of ultracold atoms in Russia: topical research. Quantum Electronics, 2020, 50, 519-519.	1.0	2
108	<title>Spectroscopic characterization of soft x-ray multilayer optics using a broadband laser-plasma radiation source</title>. , 1997, , .		1

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109	The effect of phase noise of bichromatic radiation upon resonances of coherent population trapping. Bulletin of the Lebedev Physics Institute, 2008, 35, 148-155.	0.6	1
110	Coherent population trapping resonances in the problem of quantum filtering of light pulses. Bulletin of the Lebedev Physics Institute, 2011, 38, 235-241.	0.6	1
111	Systematic Frequency Shifts in Spectroscopy of 1s-2s Transition in Atomic Hydrogen. , 2011, , .		1
112	Estimation of uncertainty budget for a thulium optical clock. AIP Conference Proceedings, 2020, , .	0.4	1
113	<title>Stigmatic high-resolution high-throughput narrowband diffraction spectrograph employing multilayer mirrors</title>. , 1994, 2012, 219.		0
114	XUV spectroscopy of laser-plasma interactions employing multilayer mirrors. Proceedings of SPIE, 2000, , .	0.8	0
115	Towards an optical measurement of the HFS interval in the 2s state in hydrogen. , 0, , .		0
116	Spectroscopy of coherent dark resonances in samarium. , 2002, , .		0
117	An optically polarised dense3He target as a spin filter for slow-neutron beams. Quantum Electronics, 2003, 33, 18-24.	1.0	0
118	PRECISION SPECTROSCOPY OF HYDROGEN AND FEMTOSECOND LASER FREQUENCY COMBS. , 2005, , .		0
119	Coherent population trapping resonances in the presence of the frequency-phase noises of an exciting field. Quantum Electronics, 2009, 39, 449-454.	1.0	0
120	New measurement of the 2S hyperfine splitting in atomic hydrogen. , 2009, , .		0
121	Precision spectroscopy on atomic hydrogen. Proceedings of SPIE, 2011, , .	0.8	0
122	Gennadii Andreevich Mesyats (on his 80th birthday). Physics-Uspekhi, 2016, 59, 211-213.	2.2	0
123	Igor Dmitrievich Novikov (on his 80th birthday). Physics-Uspekhi, 2016, 59, 96-97.	2.2	0
124	Viktor Pavlovich Silin (on his 90th birthday). Physics-Uspekhi, 2016, 59, 611-612.	2.2	0
125	Frequency standards based on ultracold atoms in tests of general relativity, navigation and gravimetry. Quantum Electronics, 2017, 47, 394-399.	1.0	0
126	Russianâ€“British Symposium on Quantum Technologies. Quantum Electronics, 2017, 47, 777-777.	1.0	0

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127	In memory of Viktor Pavlovich Silin. Physics-Uspekhi, 2019, 62, 524-525.	2.2	0
128	In memory of Evgeny Mikhailovich Dianov. Quantum Electronics, 2019, 49, 298-298.	1.0	0
129	On the Eightieth Birthday of Sergei Nikolaevich Bagayev. Quantum Electronics, 2021, 51, 958-958.	1.0	0
130	Partial Compensation of Thermal Noise in the Fundamental Mode of an Optical Cavity. Bulletin of the Lebedev Physics Institute, 2021, 48, 243-249.	0.6	0
131	Highly stable remote clock comparisons via 920 km optical fiber for precision spectroscopy of atomic hydrogen. , 2012, , .		0
132	Challenging QED with atomic Hydrogen. , 2019, , .		0
133	Photoionization dynamics of Mg atoms during Paul trap loading using a two-color UV laser system. Laser Physics Letters, 2020, 17, 125501.	1.4	0