

# Nikolai N Kolachevsky

## List of Publications by Citations

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108  
papers

2,118  
citations

17  
h-index

44  
g-index

135  
ext. papers

2,441  
ext. citations

2.1  
avg, IF

4.32  
L-index

#	Paper	IF	Citations
108	New limits on the drift of fundamental constants from laboratory measurements. <i>Physical Review Letters</i> , <b>2004</b> , 92, 230802	7.4	318
107	Improved measurement of the hydrogen 1S-2S transition frequency. <i>Physical Review Letters</i> , <b>2011</b> , 107, 203001	7.4	270
106	The Rydberg constant and proton size from atomic hydrogen. <i>Science</i> , <b>2017</b> , 358, 79-85	33.3	198
105	Subhertz linewidth diode lasers by stabilization to vibrationally and thermally compensated ultralow-expansion glass Fabry-Pérot cavities. <i>Physical Review A</i> , <b>2008</b> , 77,	2.6	175
104	Precision measurement of the hydrogen 1S-2S frequency via a 920-km fiber link. <i>Physical Review Letters</i> , <b>2013</b> , 110, 230801	7.4	131
103	Precision measurement of the hydrogen-deuterium 1S-2S isotope shift. <i>Physical Review Letters</i> , <b>2010</b> , 104, 233001	7.4	96
102	Feasibility of coherent xuv spectroscopy on the 1S <sub>2S</sub> transition in singly ionized helium. <i>Physical Review A</i> , <b>2009</b> , 79,	2.6	95
101	The GBAR antimatter gravity experiment. <i>Hyperfine Interactions</i> , <b>2015</b> , 233, 21-27	0.8	76
100	Magneto-optical trap for thulium atoms. <i>Physical Review A</i> , <b>2010</b> , 82,	2.6	69
99	Hydrogen-deuterium isotope shift: From the 1S <sub>2S</sub> -transition frequency to the proton-deuteron charge-radius difference. <i>Physical Review A</i> , <b>2011</b> , 83,	2.6	46
98	Two-photon excitation dynamics in bound two-body Coulomb systems including ac Stark shift and ionization. <i>Physical Review A</i> , <b>2006</b> , 73,	2.6	45
97	Precision spectroscopy of the 2S-4P transition in atomic hydrogen on a cryogenic beam of optically excited 2S atoms. <i>Annalen Der Physik</i> , <b>2013</b> , 525, 671-679	2.6	37
96	Precision spectroscopy of hydrogen and femtosecond laser frequency combs. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , <b>2005</b> , 363, 2155-63	3	37
95	Measurement of the 2S hyperfine interval in atomic hydrogen. <i>Physical Review Letters</i> , <b>2009</b> , 102, 213002	7.4	31
94	Broadband x-ray optical elements based on aperiodic multilayer structures. <i>Quantum Electronics</i> , <b>2000</b> , 30, 428-434	1.8	21
93	2S hyperfine structure of atomic deuterium. <i>Physical Review A</i> , <b>2004</b> , 70,	2.6	19
92	Blue laser cooling transitions in Tm I. <i>Applied Physics B: Lasers and Optics</i> , <b>2007</b> , 89, 589-594	1.9	17

91	Secondary laser cooling and capturing of thulium atoms in traps. <i>Quantum Electronics</i> , <b>2014</b> , 44, 515-520	1.8	16
90	Low phase noise diode laser oscillator for 1S-2S spectroscopy in atomic hydrogen. <i>Optics Letters</i> , <b>2011</b> , 36, 4299-301	3	15
89	Compact solid-state laser source for 1S-2S spectroscopy in atomic hydrogen. <i>Physical Review A</i> , <b>2006</b> , 73,	2.6	15
88	Precision spectroscopy of 2S-1P transitions in atomic hydrogen for a new determination of the Rydberg constant and the proton charge radius. <i>Physica Scripta</i> , <b>2015</b> , T165, 014030	2.6	14
87	Active fiber-based retroreflector providing phase-retracing anti-parallel laser beams for precision spectroscopy. <i>Optics Express</i> , <b>2016</b> , 24, 17470-85	3.3	13
86	Laser system for secondary cooling of <sup>87</sup> Sr atoms. <i>Quantum Electronics</i> , <b>2012</b> , 42, 1021-1026	1.8	12
85	Fabrication and investigation of imaging normal-incidence multilayer mirrors with a narrow-band reflection in the range $\lambda = 4.5$ nm. <i>Physica Scripta</i> , <b>1993</b> , 48, 516-520	2.6	12
84	Compact Transportable Optical Standard Based on a Single <sup>171</sup> Yb <sup>+</sup> Ion (MIS Project). <i>Bulletin of the Lebedev Physics Institute</i> , <b>2018</b> , 45, 337-340	0.5	12
83	Zeeman slowing of thulium atoms. <i>Optics Letters</i> , <b>2009</b> , 34, 2955-7	3	11
82	Spectroscopy of coherent dark resonances in multilevel atoms for the example of samarium vapor. <i>Journal of Experimental and Theoretical Physics</i> , <b>2003</b> , 96, 629-642	1	10
81	Quantum Interference Line Shifts of Broad Dipole-Allowed Transitions. <i>Annalen Der Physik</i> , <b>2019</b> , 531, 1900044	2.6	9
80	Trapping, retention and laser cooling of Th <sup>3+</sup> ions in a multisection linear quadrupole trap. <i>Quantum Electronics</i> , <b>2017</b> , 47, 406-411	1.8	9
79	Laser cooling of rare-earth atoms and precision measurements. <i>Physics-Uspekhi</i> , <b>2011</b> , 54, 863-870	2.8	9
78	Spectral parameters of reference-cavity-stabilised lasers. <i>Quantum Electronics</i> , <b>2008</b> , 38, 391-400	1.8	9
77	Laboratory search for time variation in the fine structure constant. <i>Physics-Uspekhi</i> , <b>2004</b> , 47, 1101-1118	2.8	9
76	Resonances of coherent population trapping in samarium vapours. <i>Quantum Electronics</i> , <b>2001</b> , 31, 61-66	1.8	9
75	Optical measurement of the 2S hyperfine interval in atomic hydrogen. <i>Canadian Journal of Physics</i> , <b>2002</b> , 80, 1225-1231	1.1	9
74	Ultrastable laser system for spectroscopy of the 1S-1P <sub>0</sub> clock transition in Sr atoms. <i>Quantum Electronics</i> , <b>2017</b> , 47, 400-405	1.8	8

73	Coherent excitation of the $5D_{5/2}$ level of ultra-cold rubidium atoms with short laser pulses. <i>Quantum Electronics</i> , <b>2012</b> , 42, 714-720	1.8	8
72	Photoionization broadening of the $1S_{\Sigma}$ transition in a beam of atomic hydrogen. <i>Physical Review A</i> , <b>2006</b> , 74,	2.6	8
71	Ultracold lanthanides: from optical clock to a quantum simulator. <i>Physics-Uspekhi</i> , <b>2016</b> , 59, 168-173	2.8	8
70	Detection of the clock transition (1.14 $\mu\text{h}$ ) in ultra-cold thulium atoms. <i>Quantum Electronics</i> , <b>2015</b> , 45, 482-485	1.8	7
69	On the thermal noise limit of ultrastable optical cavities. <i>Quantum Electronics</i> , <b>2018</b> , 48, 425-430	1.8	7
68	Trapping of thulium atoms in a cavity-enhanced optical lattice near a magic wavelength of 814.5 nm. <i>Quantum Electronics</i> , <b>2018</b> , 48, 415-418	1.8	6
67	Short-haul fibre-optic communication link with a phase noise compensation system for optical frequency signal transmission. <i>Quantum Electronics</i> , <b>2017</b> , 47, 794-797	1.8	6
66	Magnetic trap for thulium atoms. <i>Quantum Electronics</i> , <b>2011</b> , 41, 765-768	1.8	6
65	High-precision laser spectroscopy of cold atoms and the search for the drift of the fine structure constant. <i>Physics-Uspekhi</i> , <b>2008</b> , 51,	2.8	6
64	Broad-band stigmatic spectrograph for the soft x-ray range. <i>Quantum Electronics</i> , <b>1998</b> , 28, 821-826	1.8	6
63	Methods for determining the polarisability of the fine structure levels in the ground state of the thulium atom. <i>Quantum Electronics</i> , <b>2017</b> , 47, 479-483	1.8	5
62	Pressure shifts in high-precision hydrogen spectroscopy: II. Impact approximation and Monte-Carlo simulations. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , <b>2019</b> , 52, 075006	1.3	5
61	Improved measurement of the hyperfine structure of the laser cooling level ( $4f^{12}({}^3\text{H}_6)5d_{5/2}6s^2$ ) ( $(J=9/2)$ ) in ( ${}^{169}\text{Tm}$ ). <i>Applied Physics B: Lasers and Optics</i> , <b>2015</b> , 121, 275-282	1.9	5
60	Rabi spectroscopy of the clock transition in thulium atoms in a one-dimensional optical lattice. <i>Quantum Electronics</i> , <b>2020</b> , 50, 220-224	1.8	5
59	Multiparticle losses in a linear quadrupole Paul trap. <i>Quantum Electronics</i> , <b>2016</b> , 46, 935-940	1.8	5
58	2.8 km fiber link with phase noise compensation for transportable Yb+ optical clock characterization. <i>Laser Physics</i> , <b>2018</b> , 28, 105103	1.2	5
57	Ultrastable Laser System for Spectroscopy of the 1.14 $\mu\text{h}$ Inner-Shell Clock Transition in Tm and Its Absolute Frequency Measurement. <i>Journal of Russian Laser Research</i> , <b>2019</b> , 40, 540-546	0.7	5
56	Collimation of a thulium atomic beam by two-dimensional optical molasses. <i>Quantum Electronics</i> , <b>2013</b> , 43, 374-378	1.8	5

55	Laser cooling of thulium atoms. <i>Optics and Spectroscopy (English Translation of Optika i Spektroskopiya)</i> , <b>2011</b> , 111, 633-638	0.7	5
54	Accurate frequency and time dissemination in the optical domain. <i>Uspekhi Fizicheskikh Nauk</i> , <b>2018</b> , 188, 221-230	0.5	5
53	Compact ultrastable laser system for spectroscopy of $2S_{1/2} - 2D_{3/2}$ quadrupole transition in $^{171}\text{Yb}^+$ ion. <i>Quantum Electronics</i> , <b>2020</b> , 50, 850-854	1.8	5
52	Physics of ultracold atoms in Russia: development and co-ordination. <i>Quantum Electronics</i> , <b>2017</b> , 47, 393-393	1.8	4
51	Doppler laser cooling and vibrational spectrum of $^{24}\text{Mg}^+$ ions in a linear Paul trap. <i>Quantum Electronics</i> , <b>2018</b> , 48, 448-452	1.8	4
50	Optical pumping of ultracold thulium atoms to a lower level of the clock transition and study of their depolarisation. <i>Quantum Electronics</i> , <b>2019</b> , 49, 418-423	1.8	4
49	A new generation of cryogenic high-Q Fabry-Pérot resonators for ultrastable lasers. <i>Quantum Electronics</i> , <b>2017</b> , 47, 421-425	1.8	4
48	Frequency-modulation spectroscopy of coherent dark resonances in $^{87}\text{Rb}$ atoms. <i>Applied Physics B: Lasers and Optics</i> , <b>2009</b> , 97, 35-46	1.9	4
47	Resonant interaction of femtosecond radiation with a cloud of cold $^{87}\text{Rb}$ atoms. <i>Journal of Experimental and Theoretical Physics</i> , <b>2009</b> , 109, 359-369	1	4
46	Stable diode lasers for hydrogen precision spectroscopy. <i>European Physical Journal: Special Topics</i> , <b>2008</b> , 163, 89-94	2.3	4
45	Detection of the clock transition in thulium atoms by using repump laser radiation. <i>Quantum Electronics</i> , <b>2020</b> , 50, 566-570	1.8	4
44	Microwave frequency standard on $^{25}\text{Mg}^+$ ions: expected characteristics and prospects. <i>Quantum Electronics</i> , <b>2017</b> , 47, 426-430	1.8	3
43	Pressure shifts in high-precision hydrogen spectroscopy. I. Long-range atom-atom and atom-molecule interactions. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , <b>2019</b> , 52, 075005	1.3	3
42	A Compact Second-Harmonic Generator for Tasks of Precision Spectroscopy Within the Range of 240-300 nm. <i>Journal of Russian Laser Research</i> , <b>2016</b> , 37, 440-447	0.7	3
41	On the duration of continuous operation of an optical frequency standard based on strontium atoms. <i>Quantum Electronics</i> , <b>2018</b> , 48, 431-437	1.8	3
40	Temperature drift contribution to frequency instability of silicon Fabry-Pérot cavities. <i>Quantum Electronics</i> , <b>2019</b> , 49, 424-428	1.8	3
39	Spectroscopy of intercombination transition $1S_0 - 3P_1$ for secondary cooling of strontium atoms. <i>Quantum Electronics</i> , <b>2015</b> , 45, 166-170	1.8	3
38	Precision laser spectroscopy in fundamental studies. <i>Physics-Uspekhi</i> , <b>2014</b> , 57, 1230-1238	2.8	3

37	2s Hyperfine splitting in light hydrogen-like atoms: Theory and experiment. <i>Journal of Experimental and Theoretical Physics</i> , <b>2006</b> , 102, 367-379	1	3
36	Compensation of residual amplitude modulation fluctuations in an optoelectronic system for laser radiation frequency stabilisation. <i>Quantum Electronics</i> , <b>2020</b> , 50, 590-594	1.8	3
35	Magic wavelengths near 800 nm for precision spectroscopy of an inner-shell transition in thulium atoms. <i>Quantum Electronics</i> , <b>2019</b> , 49, 1028-1031	1.8	3
34	EIT Ground State Cooling Scheme of $171\text{Yb}^+$ Based on the $2S_{1/2}-\tilde{\pi}P_{1/2}$ Cooling Transition. <i>Journal of Russian Laser Research</i> , <b>2018</b> , 39, 568-574	0.7	3
33	Nonselective Paul ion trap loading with a light-emitting diode. <i>Applied Physics Letters</i> , <b>2019</b> , 115, 104102	3.4	2
32	Physics of ultracold atoms in Russia: topical research. <i>Quantum Electronics</i> , <b>2019</b> , 49, 409-409	1.8	2
31	Frequency transfer via an ultra-stable free-space link. <i>Quantum Electronics</i> , <b>2020</b> , 50, 267-271	1.8	2
30	Motional states of laser cooled Yb ions in an optimized radiofrequency trap. <i>Laser Physics</i> , <b>2019</b> , 29, 095201	2.0	2
29	Improved Wavelength Measurement of $2S_{1/2}-\tilde{\pi}P_{1/2}$ and $2D_{3/2}-\tilde{\sigma}[3/2]_{1/2}$ Transitions in Yb+. <i>Journal of Russian Laser Research</i> , <b>2019</b> , 40, 375-381	0.7	2
28	Stigmatic broadband spectroscopic instruments below 300 Å <b>1997</b> ,		2
27	Semiconductor laser with the subhertz linewidth. <i>Quantum Electronics</i> , <b>2008</b> , 38, 895-902	1.8	2
26	Study of transitions in thulium atoms in the 410-420-nm range for laser cooling. <i>Quantum Electronics</i> , <b>2008</b> , 38, 961-968	1.8	2
25	The 2s hyperfine structure in hydrogen and deuterium: a precision test of bound state quantum electrodynamics. <i>Canadian Journal of Physics</i> , <b>2005</b> , 83, 283-292	1.1	2
24	Spectroscopy of coherent population trapping with a light source based on a femtosecond laser. <i>Quantum Electronics</i> , <b>2004</b> , 34, 983-988	1.8	2
23	Tunable Phase-Coherent Source of the Bichromatic Light Field for the Spectroscopy of Resonances of the Coherent Population Trapping in Rare-Earth Atoms. <i>Journal of Russian Laser Research</i> , <b>2004</b> , 25, 239-252	0.7	2
22	Hyperfine structure of the metastable level in hydrogen-like atoms. <i>Quantum Electronics</i> , <b>2005</b> , 35, 207-218	1.8	2
21	Broad-band laser optical pumping of Rb for the creation of nuclear polarisation in $^3\text{He}$ . <i>Quantum Electronics</i> , <b>2000</b> , 30, 81-86	1.8	2
20	Stigmatic high-resolution high-throughput narrow-band diffraction spectrograph employing X-ray multilayer mirrors. <i>Physica Scripta</i> , <b>1993</b> , 47, 495-500	2.6	2

19	Characterization of imaging normal-incidence multilayer mirrors for the 40- to 300-Å range by spectroscopic techniques using a laser-plasma radiation source <b>1994</b> , 2012, 209		2
18	Investigation of the transition at a wavelength of 506 nm, intended for deep cooling of thulium atoms. <i>Quantum Electronics</i> , <b>2021</b> , 51, 479-483	1.8	2
17	Coherent population trapping resonances in the problem of quantum filtering of light pulses. <i>Bulletin of the Lebedev Physics Institute</i> , <b>2011</b> , 38, 235-241	0.5	1
16	Testing the Stability of the Fine Structure Constant in the Laboratory. <i>Space Science Reviews</i> , <b>2009</b> , 148, 267-288	7.5	1
15	Spectral characteristics of multilayer cobalt-carbon mirrors for the 0.5 nm range. <i>Quantum Electronics</i> , <b>1997</b> , 27, 712-716	1.8	1
14	The effect of phase noise of bichromatic radiation upon resonances of coherent population trapping. <i>Bulletin of the Lebedev Physics Institute</i> , <b>2008</b> , 35, 148-155	0.5	1
13	Optical Pumping of Samarium Atoms in a Bichromatic Laser Field in the Presence of Velocity-Changing Collisions. <i>Journal of Russian Laser Research</i> , <b>2003</b> , 24, 129-142	0.7	1
12	Estimation of uncertainty budget for a thulium optical clock <b>2020</b> ,		1
11	Long ULE Cavities with Relative Fractional Frequency Drift Rate below $5 \times 10^{-16}$ /s for Laser Frequency Stabilization. <i>Bulletin of the Lebedev Physics Institute</i> , <b>2020</b> , 47, 257-261	0.5	1
10	Physics of ultracold atoms in Russia: current research. <i>Quantum Electronics</i> , <b>2021</b> , 51, 463-463	1.8	1
9	Simultaneous bicolor interrogation in thulium optical clock providing very low systematic frequency shifts. <i>Nature Communications</i> , <b>2021</b> , 12, 5171	17.4	1
8	Compact magneto-optical trap of thulium atoms for a transportable optical clock. <i>Optics Express</i> , <b>2021</b> , 29, 36734-36744	3.3	1
7	48 -cm-long room-temperature cavities in vertical and horizontal orientations for Sr optical clock. <i>Applied Optics</i> , <b>2021</b> , 60, 9151-9159	1.7	1
6	Compact High-Finesse ULE Cavities for Laser Frequency Stabilization. <i>Bulletin of the Lebedev Physics Institute</i> , <b>2021</b> , 48, 295-300	0.5	0
5	Linear Paul Trap for Quantum Logic Experiments. <i>Bulletin of the Lebedev Physics Institute</i> , <b>2020</b> , 47, 385-389		0
4	Coherent population trapping resonances in the presence of the frequency-phase noises of an exciting field. <i>Quantum Electronics</i> , <b>2009</b> , 39, 449-454	1.8	
3	Stigmatic high-resolution high-throughput narrowband diffraction spectrograph employing multilayer mirrors <b>1994</b> , 2012, 219		
2	Photoionization dynamics of Mg atoms during Paul trap loading using a two-color UV laser system. <i>Laser Physics Letters</i> , <b>2020</b> , 17, 125501	1.5	

- 1 Partial Compensation of Thermal Noise in the Fundamental Mode of an Optical Cavity. *Bulletin of the Lebedev Physics Institute*, **2021**, 48, 243-249

0.5