Anatoly Kamchatnov

List of Publications by Year
in descending order

129	2,723	201385	233125
papers	citations	27 h-index	45 g-index

132	132	132	992
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	DYNAMICS OF BRIGHT MATTER WAVE SOLITONS IN A BOSEâ€“EINSTEIN CONDENSATE. International Journal of Modern Physics B, 2005, 19, 3415-3473.	1.0	158
2	Adiabatic Dynamics of Periodic Waves in Bose-Einstein Condensates with Time Dependent Atomic Scattering Length. Physical Review Letters, 2003, 90, 230402.	2.9	154
3	Kinetic Equation for a Dense Soliton Gas. Physical Review Letters, 2005, 95, 204101.	2.9	134
4	Oblique Dark Solitons in Supersonic Flow of a Bose-Einstein Condensate. Physical Review Letters, 2006, 97, 180405.	2.9	96
5	Dissipationless shock waves in Bose-Einstein condensates with repulsive interaction between atoms. Physical Review A, 2004, 69, .	1.0	88
6	Stabilization of Solitons Generated by a Supersonic Flow of Bose-Einstein Condensate Past an Obstacle. Physical Review Letters, 2008, 100, 160402.	2.9	85
7	Undular bore theory for the Gardner equation. Physical Review E, 2012, 86, 036605.	0.8	83
8	Asymptotic soliton train solutions of the defocusing nonlinear SchrÃ¶dinger equation. Physical Review E, 2002, 66, 036609.	0.8	78
9	Theory of optical dispersive shock waves in photorefractive media. Physical Review A, 2007, 76, .	1.0	77
10	Evolution of solitary waves and undular bores in shallow-water flows over a gradual slope with bottom friction. Journal of Fluid Mechanics, 2007, 585, 213-244.	1.4	53
11	Kinetic Equation for a Soliton Gas andÂItsÂHydrodynamic Reductions. Journal of Nonlinear Science, 2011, 21, 151-191.	1.0	53
12	Periodic solutions and Whitham equations for the AB system. Journal of Physics A, 1995, 28, 3279-3288.	1.6	48
13	Radiation of linear waves in the stationary flow of a Bose-Einstein condensate past an obstacle. Physical Review A, 2007, 75, .	1.0	45
14	On improving the effectiveness of periodic solutions of the NLS and DNLS equations. Journal of Physics A, 1990, 23, 2945-2960.	1.6	43
15	Transcritical flow of a Bose-Einstein condensate through a penetrable barrier. Physical Review A, 2009, 79, .	1.0	43
16	Dynamics of Bose-Einstein condensates in cigar-shaped traps. Physical Review A, 2004, 70, .	1.0	41
17	On Whitham theory for perturbed integrable equations. Physica D: Nonlinear Phenomena, 2004, 188, 247-261.	1.3	38
18	Spatial dispersive shock waves generated in supersonic flow of Boseâ€“Einstein condensate past slender body. Physics Letters, Section A: General, Atomic and Solid State Physics, 2006, 350, 192-196.	0.9	37

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19	Two-dimensional supersonic nonlinear SchrÃ¶dinger flow past an extended obstacle. Physical Review E, 2009, 80, 046317.	0.8	36
20	Generation of dispersive shock waves by the flow of a Bose-Einstein condensate past a narrow obstacle. Physical Review A, 2012, 85, .	1.0	36
21	Whitham equations in the AKNS scheme. Physics Letters, Section A: General, Atomic and Solid State Physics, 1994, 186, 387-390.	0.9	34
22	Asymptotic soliton train solutions of Kaupâ€“Boussinesq equations. Wave Motion, 2003, 38, 355-365.	1.0	32
23	Analytic model for a weakly dissipative shallow-water undular bore. Chaos, 2005, 15, 037102.	1.0	29
24	Dispersive shock wave theory for nonintegrable equations. Physical Review E, 2019, 99, 012203.	0.8	29
25	Creation and evolution of trains of dark solitons in a trapped one-dimensional Bose-Einstein condensate. Physical Review A, 2003, 68, .	1.0	28
26	Wave Breaking and the Generation of Undular Bores in an Integrable Shallow Water System. Studies in Applied Mathematics, 2005, 114, 395-411.	1.1	28
27	Nonlinear diffraction of light beams propagating in photorefractive media with embedded reflecting wire. Physical Review A, 2008, 78, .	1.0	28
28	Wave patterns generated by a supersonic moving body in a binary Bose-Einstein condensate. Physical Review A, 2009, 79, .	1.0	28
29	Dynamics of ring dark solitons in Boseâ€“Einstein condensates and nonlinear optics. Physics Letters, Section A: General, Atomic and Solid State Physics, 2010, 374, 4625-4628.	0.9	27
30	Nonlinear polarization waves in a two-component Bose-Einstein condensate. Physical Review A, 2014, 89, .	1.0	27
31	Evolution of initial discontinuities in the Riemann problem for the Kaup-Boussinesq equation with positive dispersion. Chaos, 2017, 27, 083107.	1.0	26
32	Dispersive hydrodynamics of nonlinear polarization waves in two-component Bose-Einstein condensates. SciPost Physics, 2016, 1, .	1.5	25
33	Wave pattern induced by a localized obstacle in the flow of a one-dimensional polariton condensate. Physical Review B, 2012, 86, .	1.1	24
34	Hydrodynamic flow of expanding Bose-Einstein condensates. Physical Review A, 2003, 68, .	1.0	23
35	Generation of Cherenkov waves in the flow of a Boseâ€“Einstein condensate past an obstacle. Journal of Physics B: Atomic, Molecular and Optical Physics, 2008, 41, 165301.	0.6	23
36	Solution of the Riemann problem for polarization waves in a two-component Bose-Einstein condensate. Physical Review E, 2017, 96, 062202.	0.8	23

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37	Condition for convective instability of dark solitons. Physics Letters, Section A: General, Atomic and Solid State Physics, 2011, 375, 2577-2580.	0.9	21
38	Dark soliton oscillations in Boseâ€“Einstein condensates with multi-body interactions. Journal of Physics B: Atomic, Molecular and Optical Physics, 2009, 42, 185303.	0.6	20
39	Quantitative Analysis of Shock Wave Dynamics in a Fluid of Light. Physical Review Letters, 2021, 126, 183901.	2.9	20
40	Periodic solutions and Whitham equations for the Heisenberg continuous classical spin model. Physics Letters, Section A: General, Atomic and Solid State Physics, 1992, 162, 389-396.	0.9	19
41	Fermi resonance solitary wave on the interface between two layers of organic semiconductors. Physical Review B, 1996, 53, 15451-15454.	1.1	18
42	On generating functions in the AKNS hierarchy. Physics Letters, Section A: General, Atomic and Solid State Physics, 2002, 301, 269-274.	0.9	18
43	Whitham method for the Benjamin-Ono-Burgers equation and dispersive shocks. Physical Review E, 2007, 75, 016307.	0.8	17
44	Wave breaking and formation of dispersive shock waves in a defocusing nonlinear optical material. Physical Review A, 2019, 99, .	1.0	16
45	Fermi Resonance Interface Modes: Propagation along the Interfaces. The Journal of Physical Chemistry, 1994, 98, 13607-13611.	2.9	15
46	Optical shock waves in media with quadratic nonlinearity. Physical Review E, 1998, 58, R4120-R4123.	0.8	15
47	Formation of soliton trains in Boseâ€“Einstein condensates as a nonlinear Fresnel diffraction of matter waves. Physics Letters, Section A: General, Atomic and Solid State Physics, 2003, 319, 406-412.	0.9	15
48	Expansion of Bose-Einstein condensates confined in quasi-one-dimensional or quasi-two-dimensional traps. Journal of Experimental and Theoretical Physics, 2004, 98, 908-917.	0.2	15
49	Two-dimensional periodic waves in supersonic flow of a Boseâ€“Einstein condensate. Journal of Physics A: Mathematical and Theoretical, 2007, 40, 611-619.	0.7	15
50	Transcritical flow of a stratified fluid over topography: analysis of the forced Gardner equation. Journal of Fluid Mechanics, 2013, 736, 495-531.	1.4	15
51	Riemann problem for the photon fluid: Self-steepening effects. Physical Review A, 2017, 96, .	1.0	15
52	Evolution of wave pulses in fully nonlinear shallow-water theory. Physics of Fluids, 2019, 31, .	1.6	15
53	Gurevichâ€“Pitaevskii problem and its development. Physics-Uspekhi, 2021, 64, 48-82.	0.8	15
54	Stationary wave patterns generated by an impurity moving with supersonic velocity through a Bose-Einstein condensate. Physical Review A, 2009, 79, .	1.0	14

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55	Mixed-isotope Bose-Einstein condensates in rubidium. Physical Review A, 2004, 69, .	1.0	13
56	Flow of a Bose-Einstein condensate in a quasi-one-dimensional channel under the action of a piston. Journal of Experimental and Theoretical Physics, 2010, 110, 170-182.	0.2	13
57	Whitham theory for perturbed Kortewegâ€“de Vries equation. Physica D: Nonlinear Phenomena, 2016, 333, 99-106.	1.3	13
58	Oblique Spatial Dispersive Shock Waves in Nonlinear SchrÃ¶dinger Flows. SIAM Journal on Applied Mathematics, 2017, 77, 1352-1374.	0.8	13
59	Variational approach to solitons in systems with cascadedÏ‡(2)snonlinearity. Physical Review E, 1997, 55, 1894-1898.	0.8	12
60	On the relationship between a 2Ã—2 matrix and second-order scalar spectral problems for integrable equations. Journal of Physics A, 2002, 35, L13-L18.	1.6	12
61	On dissipationless shock waves in a discrete nonlinear SchrÃ¶dinger equation. Journal of Physics A, 2004, 37, 5547-5568.	1.6	12
62	Nonlinear optical vibrations in organic superlattices with interface Fermi resonance. Chemical Physics, 1995, 198, 245-255.	0.9	11
63	Oblique Breathers Generated by a Flow of Two-Component Bose-Einstein Condensates Past a Polarized Obstacle. Physical Review Letters, 2013, 111, 140402.	2.9	11
64	Nonlinear waves in coherently coupled Bose-Einstein condensates. Physical Review A, 2016, 93, .	1.0	11
65	Evolution of initial discontinuities in the DNLS equation theory. Journal of Physics Communications, 2018, 2, 025027.	0.5	11
66	Polariton effect in nonlinear pulse propagation. Journal of Experimental and Theoretical Physics, 2003, 96, 876-884.	0.2	10
67	Soliton propagation in a medium with Kerr nonlinearity and resonant impurities: A variational approach. Physical Review E, 2003, 67, 046615.	0.8	10
68	Generation of linear waves in Bose-Einstein condensate flow past an obstacle. Journal of Experimental and Theoretical Physics, 2007, 105, 520-525.	0.2	10
69	On the evolution of an optical pulse with initial chirp in a nonlinear fiber at the zero dispersion point. Optics Communications, 1999, 162, 162-168.	1.0	9
70	Oblique solitons generated by the flow of a polariton condensate past an obstacle. Journal of Experimental and Theoretical Physics, 2012, 115, 579-585.	0.2	9
71	Formation of dispersive shock waves in evolution of a two-temperature collisionless plasma. Physics of Fluids, 2020, 32, 126115.	1.6	9
72	Theory of quasi-simple dispersive shock waves and number of solitons evolved from a nonlinear pulse. Chaos, 2020, 30, 123148.	1.0	9

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73	On the Baker-Akhiezer function in the AKNS scheme. Journal of Physics A, 2001, 34, L441-L446.	1.6	8
74	On asymptotic solutions of integrable wave equations. Physics Letters, Section A: General, Atomic and Solid State Physics, 2001, 287, 223-232.	0.9	8
75	Quasiâ€“one-dimensional flow of polariton condensate past an obstacle. Europhysics Letters, 2012, 97, 10006.	0.7	8
76	Two-dimensional dispersive shock waves in dissipative optical media. Optics Letters, 2013, 38, 790.	1.7	8
77	Long-time evolution of pulses in the Kortewegâ€“de Vries equation in the absence of solitons reexamined: Whitham method. Physical Review E, 2019, 99, 012210.	0.8	8
78	Collision of rarefaction waves in Bose-Einstein condensates. Physical Review A, 2019, 99, .	1.0	8
79	Propagation of wave packets along intensive simple waves. Physics of Fluids, 2021, 33, .	1.6	8
80	Polarization hydrodynamics in a one-dimensional polariton condensate. Physical Review B, 2013, 88, .	1.1	7
81	Interference effects in the two-dimensional scattering of microcavity polaritons by an obstacle: phase dislocations and resonances. European Physical Journal D, 2015, 69, 1.	0.6	7
82	Nonlinear waves in two-component Bose-Einstein condensates: Manakov system and Kowalevski equations. Physical Review A, 2015, 91, .	1.0	7
83	Formation of dispersive shock waves in a saturable nonlinear medium. Physical Review E, 2020, 102, 032215.	0.8	7
84	Dynamics of Fermi resonance solitary waves propagating along two interfaces. Physical Review B, 1998, 57, 2461-2467.	1.1	6
85	Simple waves in a two-component Bose-Einstein condensate. Physical Review E, 2018, 97, 042208.	0.8	6
86	Wave Breaking in Dispersive Fluid Dynamics of the Boseâ€“Einstein Condensate. Journal of Experimental and Theoretical Physics, 2018, 127, 903-911.	0.2	6
87	Creation of solitons from a long SIT pulse. Physics Letters, Section A: General, Atomic and Solid State Physics, 1995, 202, 54-60.	0.9	5
88	Threshold Behavior of Strongly Localized Nonlinear Modes in Crystals with Fermi Resonance Interaction. Molecular Crystals and Liquid Crystals, 2001, 355, 25-39.	0.3	5
89	Polariton gap solitary waves in semiconductor microcavities. Journal of Luminescence, 2004, 110, 373-377.	1.5	5
90	Matter sound waves in two-component Boseâ€“Einstein condensates. Journal of Physics B: Atomic, Molecular and Optical Physics, 2008, 41, 215302.	0.6	5

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91	On periodic solutions and their modulations of the Manakov system. Journal of Physics A: Mathematical and Theoretical, 2014, 47, 145203.	0.7	5
92	On exact solutions of nonlinear acoustic equations. Wave Motion, 2016, 67, 81-88.	1.0	5
93	Dispersionless evolution of inviscid nonlinear pulses. Europhysics Letters, 2020, 129, 64003.	0.7	5
94	Number of Solitons Generated from an Intense Initial Pulse at Asymptotically Large Time. Journal of Experimental and Theoretical Physics, 2021, 132, 63-72.	0.2	5
95	Landauâ€“Khalatnikov Problem in Relativistic Fluid Dynamics. Journal of Experimental and Theoretical Physics, 2019, 129, 607-617.	0.2	4
96	Number of solitons produced from a large initial pulse in the generalized NLS dispersive hydrodynamics theory. Physical Review E, 2021, 104, 054203.	0.8	4
97	Propagation of instability fronts in modulationally unstable systems. Europhysics Letters, 2021, 136, 40001.	0.7	4
98	Theory of continuous-flow amplifiers and resonators. Soviet Journal of Quantum Electronics, 1982, 12, 599-602.	0.1	3
99	Classical model for the spin alignment of 'odd nucleons'. Journal of Physics G: Nuclear and Particle Physics, 1990, 16, 1203-1212.	1.4	3
100	The Thirring model as an approximation to the theory of two-photon propagation. Journal of Physics A, 1997, 30, 7485-7499.	1.6	3
101	Temporal Talbot effect in interference of matter waves from arrays of Boseâ€“Einstein condensates and transition to Fraunhofer diffraction. Physics Letters, Section A: General, Atomic and Solid State Physics, 2004, 324, 227-234.	0.9	3
102	Generation of oblique dark solitons in supersonic flow of Bose-Einstein condensate past an obstacle. Nuclear Physics A, 2007, 790, 771c-775c.	0.6	3
103	Periodic waves in two-component Bose-Einstein condensates with repulsive interactions between atoms. Europhysics Letters, 2013, 103, 60003.	0.7	3
104	Large transverse shifts appearing upon passage of vortices through oblique dark solitons. Physical Review A, 2014, 89, .	1.0	3
105	Periodic waves in a two-component Bose-Einstein condensate. Journal of Experimental and Theoretical Physics, 2014, 118, 630-642.	0.2	3
106	Expansion dynamics of a two-component quasi-one-dimensional Boseâ€“Einstein condensate: Phase diagram, self-similar solutions, and dispersive shock waves. Journal of Experimental and Theoretical Physics, 2017, 124, 546-563.	0.2	3
107	Motion of dispersive shock edges in nonlinear pulse evolution. Theoretical and Mathematical Physics(Russian Federation), 2020, 202, 363-370.	0.3	3
108	Influence of the gas flow turbulence on the angular divergence of radiation emitted from a plane-parallel optical resonator. Soviet Journal of Quantum Electronics, 1989, 19, 468-471.	0.1	2

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109	Periodic waves and solitons of two-photon propagation. Journal of Physics A, 1996, 29, 4127-4139.	1.6	2
110	Nonlinear periodic waves and Whitham modulation theory for degenerate two-photon propagation. Physics Letters, Section A: General, Atomic and Solid State Physics, 1997, 226, 355-364.	0.9	2
111	Charged Frenkel biexcitons in organic molecular crystals. JETP Letters, 2001, 73, 341-343.	0.4	2
112	Periodic waves and solitons in a nonlinear fibre with resonant impurities. Journal of Modern Optics, 2002, 49, 2183-2193.	0.6	2
113	Stationary one-dimensional dispersive shock waves. Optics Letters, 2012, 37, 389.	1.7	2
114	Wave patterns generated by a flow of a two-component Bose-Einstein condensate with spin-orbit interaction past a localized obstacle. Europhysics Letters, 2014, 107, 10008.	0.7	2
115	Trigonometric shock waves in the Kaupâ€“Boussinesq system. Nonlinear Dynamics, 2022, 108, 2505-2512.	2.7	2
116	The inverse problem for second harmonic generation with amplitude-modulated pulses. Physics Letters, Section A: General, Atomic and Solid State Physics, 2000, 276, 267-271.	0.9	1
117	Kinematic Frenkel gap biexciton in one-dimensional structures. Synthetic Metals, 2001, 116, 293-295.	2.1	1
118	The Evolution of High-Intensity Light Pulses in a Nonlinear Medium Taking into Account the Raman Effect. Optics and Spectroscopy (English Translation of Optika I Spektroskopiya), 2019, 127, 95-106.	0.2	1
119	Thermal self-interaction of light beams. Soviet Journal of Quantum Electronics, 1987, 17, 906-909.	0.1	0
120	Multiple transmission of waves across a medium with random scattering centers and angular divergence of radiation in a Fabryâ€“Perot resonator. Soviet Journal of Quantum Electronics, 1990, 20, 989-992.	0.1	0
121	Decay of an optical pulse in a nonlinear fiber at the zero dispersion point. Optics Communications, 2000, 178, 333-337.	1.0	0
122	Nonconservation of the quantum number K and phase transitions in rapidly rotating nuclei. Physics of Atomic Nuclei, 2000, 63, 373-376.	0.1	0
123	Difference frequency Fermi resonance interface modes in organic multilayer structures. Chemical Physics, 2002, 282, 399-408.	0.9	0
124	<title>Coherent soliton propagation in a mixture of two-level atoms</title>. , 2004, , .		0
125	Propagation of a self-induced transparency pulse in a spatially dispersive medium. Journal of Experimental and Theoretical Physics, 2006, 102, 562-569.	0.2	0
126	Dispersive shock waves in nonlinear and atomic optics. EPJ Web of Conferences, 2017, 161, 01005.	0.1	0

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127	Self-similar wave breaking in dispersive Korteweg-de Vries hydrodynamics. Chaos, 2019, 29, 023106.	1.0	0
128	Two-photon propagation of light and the modified Liouville equation. Theoretical and Mathematical Physics(Russian Federation), 2020, 204, 1093-1099.	0.3	0
129	Contour dynamics of two-dimensional dark solitons. Physical Review E, 2022, 105, 044204.	0.8	0