

Iwo Bialynicki-Birula

List of Publications by Year in descending order

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127
papers

5,631
citations

126907

33
h-index

79698

73
g-index

129
all docs

129
docs citations

129
times ranked

2691
citing authors

#	ARTICLE	IF	CITATIONS
1	Comment on "Possibility of small electron states". Physical Review A, 2022, 105, .	2.5	2
2	Ehrenfest theorem in relativistic quantum theory*. Journal of Physics B: Atomic, Molecular and Optical Physics, 2022, 55, 114001.	1.5	2
3	Backflow in relativistic wave equations. Journal of Physics A: Mathematical and Theoretical, 2022, 55, 255702.	2.1	7
4	New solutions of the Dirac, Maxwell, and Weyl equations from the fractional Fourier transform. Physical Review D, 2021, 103, .	4.7	4
5	Heisenberg uncertainty relations for relativistic bosons. Physical Review A, 2021, 103, .	2.5	5
6	Time crystals made of electron-positron pairs. Physical Review A, 2021, 104, .	2.5	4
7	Comment on "Electronic Maxwell's equations". New Journal of Physics, 2021, 23, 118001.	2.9	2
8	Three measures of fidelity for photon states. Physical Review A, 2020, 102, .	2.5	3
9	Comment on "Nondispersive analytical solutions to the Dirac equation". Physical Review Research, 2020, 2, .	3.6	1
10	Twisted localized solutions of the Dirac equation: Hopfionlike states of relativistic electrons. Physical Review A, 2019, 100, .	2.5	10
11	Helicity amplitudes, polarization of EM waves and Stokes parameters: classical versus quantum theory. Journal of Optics (United Kingdom), 2019, 21, 094002.	2.2	3
12	Comment on "Quantum reciprocity relations for fluctuations of position and momentum". Physical Review A, 2019, 100, .	2.5	1
13	Heisenberg uncertainty relation for relativistic electrons. New Journal of Physics, 2019, 21, 073036.	2.9	3
14	Comment on "Relativistic Quantum Dynamics of Twisted Electron Beams in Arbitrary Electric and Magnetic Fields". Physical Review Letters, 2019, 122, 159301.	7.8	8
15	Comment on "Role of Radial Charges on the Angular Momentum of Electromagnetic Fields: Spin-3/2 Light". Physical Review Letters, 2019, 122, 089301.	7.8	1
16	Trapping and Guiding Bodies by Gravitational Waves Endowed with Angular Momentum. Physical Review Letters, 2018, 121, 171101.	7.8	18
17	Quantum numbers and spectra of structured light. Physica Scripta, 2018, 93, 104005.	2.5	8
18	Relativistic Electron Wave Packets Carrying Angular Momentum. Physical Review Letters, 2017, 118, 114801.	7.8	61

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19	Quantum-mechanical description of optical beams. <i>Journal of Optics (United Kingdom)</i> , 2017, 19, 125201.	2.2	22
20	Comment on "Relativistic Electron Vortices". <i>Physical Review Letters</i> , 2017, 119, 029501.	7.8	7
21	Gravitational waves carrying orbital angular momentum. <i>New Journal of Physics</i> , 2016, 18, 023022.	2.9	24
22	Trapping neutral particles endowed with a magnetic moment by an electromagnetic wave carrying orbital angular momentum: Semiclassical theory. <i>Physical Review A</i> , 2016, 93, .	2.5	4
23	Quantum fluctuations of geometry in a hot Universe. <i>Classical and Quantum Gravity</i> , 2015, 32, 215015.	4.0	7
24	Relativistic Wigner functions. <i>EPJ Web of Conferences</i> , 2014, 78, 01001.	0.3	11
25	Polarization-dependent heating of the cosmic microwave background radiation by a magnetic field. <i>Physical Review D</i> , 2014, 90, .	4.7	2
26	Local and nonlocal observables in quantum optics. <i>New Journal of Physics</i> , 2014, 16, 113056.	2.9	14
27	Solutions of the d'Alembert and Klein-Gordon equations confined to a region with one fixed and one moving wall. <i>Europhysics Letters</i> , 2013, 101, 60003.	2.0	4
28	Tying Knots in Light Fields. <i>Physical Review Letters</i> , 2013, 111, 150404.	7.8	139
29	The role of the Riemann-Silberstein vector in classical and quantum theories of electromagnetism. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2013, 46, 053001.	2.1	98
30	Uncertainty relation for focal spots in light beams. <i>Physical Review A</i> , 2013, 88, .	2.5	2
31	Heisenberg uncertainty relations for photons. <i>Physical Review A</i> , 2012, 86, .	2.5	23
32	Uncertainty Relation for Photons. <i>Physical Review Letters</i> , 2012, 108, 140401.	7.8	32
33	Canonical separation of angular momentum of light into its orbital and spin parts. <i>Journal of Optics (United Kingdom)</i> , 2011, 13, 064014.	2.2	84
34	Time evolution of the QED vacuum in a uniform electric field: Complete analytic solution by spinorial decomposition. <i>Physical Review D</i> , 2011, 83, .	4.7	10
35	Entropic Uncertainty Relations in Quantum Physics. , 2011, , 1-34.		54
36	Dynamical Casimir effect in uniformly accelerated media. <i>Optics Communications</i> , 2010, 283, 644-649.	2.1	3

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37	Comment on "Uncertainty relations in terms of the Tsallis entropy" Physical Review A, 2010, 81, .	2.5	10
38	Simple model of self-supported deformed states of isolated atoms. Physical Review A, 2010, 81, .	2.5	2
39	Why photons cannot be sharply localized. Physical Review A, 2009, 79, .	2.5	34
40	Introduction to "Quantum Zeno Effect": The fifth quest. Journal of Physics: Conference Series, 2009, 196, 011010.	0.4	0
41	Electromagnetic radiation by gravitating bodies. Physical Review A, 2008, 77, .	2.5	4
42	Dynamical Casimir effect in oscillating media. Physical Review A, 2008, 78, .	2.5	8
43	Quantum electrodynamics of qubits. Physical Review A, 2007, 76, .	2.5	18
44	Formulation of the uncertainty relations in terms of the Rényi entropies. Physical Review A, 2006, 74, .	2.5	218
45	Beams of electromagnetic radiation carrying angular momentum: The Riemann-Silberstein vector and the classical-quantum correspondence. Optics Communications, 2006, 264, 342-351.	2.1	55
46	Exponential beams of electromagnetic radiation. Journal of Physics B: Atomic, Molecular and Optical Physics, 2006, 39, S545-S553.	1.5	9
47	Pinning and transport of cyclotron (Landau) orbits by electromagnetic vortices. Physical Review A, 2006, 73, .	2.5	10
48	On the linearity of the Schrödinger equation. Brazilian Journal of Physics, 2005, 35, 211.	1.4	7
49	Gravity-induced resonances in a rotating trap. Physical Review A, 2005, 71, .	2.5	10
50	Electromagnetic vortex lines riding atop null solutions of the Maxwell equations. Journal of Optics, 2004, 6, S181-S183.	1.5	30
51	Particle Beams Guided by Electromagnetic Vortices: New Solutions of the Lorentz, Schrödinger, Klein-Gordon, and Dirac Equations. Physical Review Letters, 2004, 93, 020402.	7.8	41
52	The Structure of the Vacuum and the Photon Number. Lecture Notes in Physics, 2004, , 287-295.	0.7	1
53	Solutions of the Logarithmic Schrödinger Equation in a Rotating Harmonic Trap. , 2004, , 99-106.		2
54	Vortex lines of the electromagnetic field. Physical Review A, 2003, 67, .	2.5	55

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55	Center-of-mass motion in the many-body theory of Bose-Einstein condensates. Physical Review A, 2002, 65, .	2.5	28
56	Canonical quantization, twistors and relativistic wave equations. Journal of Modern Optics, 2002, 49, 1957-1970.	1.3	2
57	Quantum Fictitious Forces. Fortschritte Der Physik, 2002, 50, 599-607.	4.4	9
58	Canonical Quantization, Twistors and Relativistic Wave Equations. Fortschritte Der Physik, 2002, 50, 686-686.	4.4	0
59	Motion of vortex lines in nonlinear wave mechanics. Physical Review A, 2001, 65, .	2.5	9
60	The Wigner functional of the electromagnetic field. Optics Communications, 2000, 179, 237-246.	2.1	14
61	Squeezing of electromagnetic field in a cavity by electrons in Trojan states. Physical Review A, 2000, 63, .	2.5	0
62	Time Evolution of Quantum Fractals. Physical Review Letters, 2000, 85, 5022-5025.	7.8	52
63	Motion of vortex lines in quantum mechanics. Physical Review A, 2000, 61, .	2.5	109
64	Exponential Localization of Photons. Physical Review Letters, 1998, 80, 5247-5250.	7.8	87
65	Fermi accelerator in atom optics. Physical Review A, 1998, 58, 4779-4783.	2.5	72
66	Rotational Frequency Shift. Physical Review Letters, 1997, 78, 2539-2542.	7.8	145
67	Radiative decay of Trojan wave packets. Physical Review A, 1997, 56, 3623-3625.	2.5	19
68	Quantum Mechanics as a Generalization of Nambu Dynamics to the Weyl-Wigner Formalism. Zeitschrift Fur Naturforschung - Section A Journal of Physical Sciences, 1997, 52, 9-12.	1.5	0
69	Nonspreading Wave Packets for Rydberg Electrons in Rotating Molecules with Electric Dipole Moments. Physical Review Letters, 1996, 77, 4298-4301.	7.8	27
70	V Photon Wave Function. Progress in Optics, 1996, , 245-294.	0.6	179
71	The Photon Wave Function. , 1996, , 313-322.		36
72	On the measurability of the quantum phase distribution. Applied Physics B: Lasers and Optics, 1995, 60, 275-277.	2.2	6

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73	Finite nonperturbative solutions of Dyson-Schwinger equations in QED in the infrared domain. <i>Physical Review D</i> , 1995, 52, 2439-2445.	4.7	0
74	Bialynicki-Birula, Kalinski, and Eberly Reply:. <i>Physical Review Letters</i> , 1995, 75, 973-973.	7.8	15
75	Dynamical Localization: Classical vs Quantum Oscillations in Momentum Spread of Cold Atoms. <i>Physical Review Letters</i> , 1995, 74, 3959-3962.	7.8	49
76	Numerical observation of stable field-supported Rydberg wave packets. <i>Physical Review A</i> , 1995, 52, 2460-2463.	2.5	22
77	Lagrange Equilibrium Points in Celestial Mechanics and Nonspreading Wave Packets for Strongly Driven Rydberg Electrons. <i>Physical Review Letters</i> , 1994, 73, 1777-1780.	7.8	162
78	Weyl, Dirac, and Maxwell equations on a lattice as unitary cellular automata. <i>Physical Review D</i> , 1994, 49, 6920-6927.	4.7	152
79	Reconstruction of the Wavefunction from the Photon Number and Quantum Phase Distributions. <i>Journal of Modern Optics</i> , 1994, 41, 2203-2208.	1.3	21
80	Evolution modes of the vacuum Wigner function in strong-field QED. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 1993, 311, 329-338.	4.1	9
81	Simple relativistic model of a finite-size particle. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1993, 182, 346-352.	2.1	14
82	Various measures of quantum phase uncertainty: a comparative study. <i>Physica Scripta</i> , 1993, T48, 113-118.	2.5	59
83	Wigner function of relativistic spin-1/2 particles. <i>Physical Review A</i> , 1992, 46, 645-647.	2.5	16
84	Geometric Phase's First Formulators. <i>Physics Today</i> , 1991, 44, 83-84.	0.3	0
85	Quantum mechanics as a generalization of Nambu dynamics to the Weyl-Wigner formalism. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1991, 158, 453-457.	2.1	39
86	Phase-space structure of the Dirac vacuum. <i>Physical Review D</i> , 1991, 44, 1825-1835.	4.7	167
87	Spatial antibunching of photons. <i>Physical Review A</i> , 1991, 43, 3696-3703.	2.5	3
88	Angular correlations of photons. <i>Physical Review A</i> , 1990, 42, 2829-2838.	2.5	7
89	Does measurement reverse the direction of intrinsic time?. <i>Physica B: Physics of Condensed Matter & C: Atomic, Molecular and Plasma Physics, Optics</i> , 1988, 151, 302-305.	0.9	1
90	Nonlinear Structure of the Electromagnetic Vacuum. <i>Physica Scripta</i> , 1988, T21, 22-26.	2.5	7

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91	Berry's phase in the relativistic theory of spinning particles. <i>Physical Review D</i> , 1987, 35, 2383-2387.	4.7	52
92	Squeezed states of light and sound. , 1987, , 226-233.		0
93	Space-time description of squeezing. <i>Journal of the Optical Society of America B: Optical Physics</i> , 1987, 4, 1621.	2.1	40
94	Collective excitations of electrons by an intense wave in a magnetic field. <i>Journal of the Optical Society of America B: Optical Physics</i> , 1986, 3, 1311.	2.1	0
95	Comment on "Quantum electrodynamics based on self-energy: Lamb shift and spontaneous emission without field quantization". <i>Physical Review A</i> , 1986, 34, 3500-3501.	2.5	15
96	Model studies of collective atomic excitations by intense laser fields. <i>Physical Review A</i> , 1986, 33, 1671-1676.	2.5	15
97	Exact solutions of nonrelativistic classical and quantum field theory with harmonic forces. <i>Letters in Mathematical Physics</i> , 1985, 10, 189-194.	1.1	12
98	Entropic uncertainty relations for angular distributions. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1985, 108, 384-386.	2.1	29
99	Solutions of Vlasov-Maxwell equations for a magnetically confined relativistic cold plasma. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1985, 133, 228-246.	2.6	1
100	Entropic uncertainty relations in quantum mechanics. <i>Lecture Notes in Mathematics</i> , 1985, , 90-103.	0.2	35
101	Comment on "Quantization in the temporal gauge". <i>Physical Review D</i> , 1984, 29, 3000-3001.	4.7	6
102	Gauge-independent canonical formulation of relativistic plasma theory. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1984, 128, 509-519.	2.6	54
103	Entropic uncertainty relations. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1984, 103, 253-254.	2.1	110
104	Classical model of the electron. Exactly soluble example. <i>Physical Review D</i> , 1983, 28, 2114-2117.	4.7	13
105	A note on helicity. <i>Journal of Mathematical Physics</i> , 1981, 22, 2530-2532.	1.1	16
106	Phase Representation of Intense Photon Beams and Its Applications. , 1980, , 119-125.		2
107	Gaussons: Solitons of the Logarithmic Schrödinger Equation. <i>Physica Scripta</i> , 1979, 20, 539-544.	2.5	144
108	No-go theorem concerning the superradiant phase transition in atomic systems. <i>Physical Review A</i> , 1979, 19, 301-303.	2.5	108

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109	Triple optical resonance. <i>Physical Review A</i> , 1977, 16, 1318-1321.	2.5	23
110	Nonperturbative calculation of the Bloch-Siegert shift. <i>Lettere Al Nuovo Cimento Rivista Internazionale Della SocietÀ Italiana Di Fisica</i> , 1976, 15, 627-630.	0.4	5
111	Nonlinear wave mechanics. <i>Annals of Physics</i> , 1976, 100, 62-93.	2.8	559
112	Quantum electrodynamics of intense photon beams. New approximation method. <i>Physical Review A</i> , 1976, 14, 1101-1108.	2.5	78
113	Uncertainty relations for information entropy in wave mechanics. <i>Communications in Mathematical Physics</i> , 1975, 44, 129-132.	2.2	890
114	Quantum Electrodynamics of Intense Photon Beams. <i>Physical Review A</i> , 1973, 8, 3146-3153.	2.5	28
115	Magnetic Monopoles in the Hydrodynamic Formulation of Quantum Mechanics. <i>Physical Review D</i> , 1971, 3, 2410-2412.	4.7	42
116	Classical Electrodynamics in Two Dimensions: Exact Solution. <i>Physical Review D</i> , 1971, 3, 864-866.	4.7	7
117	Solutions of the equations of motion in classical and quantum theories. <i>Annals of Physics</i> , 1971, 67, 252-273.	2.8	26
118	Relativistic Quantum Mechanics of Dyons. Exact Solution. <i>Physical Review D</i> , 1971, 3, 2413-2415.	4.7	14
119	Exactly Soluble Model of Relativistic Field Theory. <i>Physical Review D</i> , 1970, 1, 2347-2349.	4.7	3
120	Nonlinear Effects in Quantum Electrodynamics. Photon Propagation and Photon Splitting in an External Field. <i>Physical Review D</i> , 1970, 2, 2341-2345.	4.7	336
121	Explicit solution of the continuous Baker-Campbell-Hausdorff problem and a new expression for the phase operator. <i>Annals of Physics</i> , 1969, 51, 187-200.	2.8	111
122	Gauge Transformations in the S-Matrix Theory. <i>Physical Review</i> , 1968, 166, 1505-1506.	2.7	6
123	Green's Functions for the Ising Chain. <i>Journal of Mathematical Physics</i> , 1968, 9, 1602-1605.	1.1	2
124	Theorem Concerning Gauge Invariance in Quantum Electrodynamics. <i>Physical Review</i> , 1967, 155, 1414-1414.	2.7	20
125	Quantum Electrodynamics without Electromagnetic Field. <i>Physical Review</i> , 1963, 130, 465-468.	2.7	70
126	On the Gauge Covariance of Quantum Electrodynamics. <i>Journal of Mathematical Physics</i> , 1962, 3, 1094-1098.	1.1	23

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127	Canonical Quantization, Twistors and Relativistic Wave Equations. , 0, , 257-257.		0