Iâ€y Dodin

List of Publications by Year
in descending order

83 papers	1,184 citations	394421 19 h-index	526287 27 g-index
84 all docs	84 docs citations	84 times ranked	526 citing authors

#	Article	IF	Citations
1	Metaplectic geometrical optics for ray-based modeling of caustics: Theory and algorithms. Physics of Plasmas, 2022, 29, .	1.9	2
2	Quantum signal processing for simulating cold plasma waves. Physical Review A, 2022, 105, .	2.5	7
3	Wave-kinetic approach to zonal-flow dynamics: Recent advances. Physics of Plasmas, 2021, 28, .	1.9	11
4	Exactly unitary discrete representations of the metaplectic transform for linear-time algorithms. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2021, 38, 634.	1.5	5
5	Steepest-descent algorithm for simulating plasma-wave caustics via metaplectic geometrical optics. Physical Review E, 2021, 104, 025304.	2.1	5
6	On applications of quantum computing to plasma simulations. Physics of Plasmas, 2021, 28, .	1.9	25
7	Metaplectic geometrical optics for modeling caustics in uniform and non-uniform media. Journal of Optics (United Kingdom), 2021, 23, 025601.	2.2	8
8	Quasioptical modeling of wave beams with and without mode conversion. IV. Numerical simulations of waves in dissipative media. Physics of Plasmas, 2021, 28, .	1.9	5
9	Gravitational spin Hall effect of light. Physical Review D, 2020, 102, .	4.7	41
10	Theory of the tertiary instability and the Dimits shift within a scalar model. Journal of Plasma Physics, 2020, 86, .	2.1	9
11	Average nonlinear dynamics of particles in gravitational pulses: Effective Hamiltonian, secular acceleration, and gravitational susceptibility. Physical Review D, 2020, 102, .	4.7	5
12	Solitary zonal structures in subcritical drift waves: a minimum model. Plasma Physics and Controlled Fusion, 2020, 62, 045021.	2.1	6
13	Theory of the Tertiary Instability and the Dimits Shift from Reduced Drift-Wave Models. Physical Review Letters, 2020, 124, 055002.	7.8	24
14	Restoring geometrical optics near caustics using sequenced metaplectic transforms. New Journal of Physics, 2020, 22, 083078.	2.9	12
15	Quasioptical modeling of wave beams with and without mode conversion. II. Numerical simulations of single-mode beams. Physics of Plasmas, 2019, 26, .	1.9	14
16	Quasioptical modeling of wave beams with and without mode conversion. III. Numerical simulations of mode-converting beams. Physics of Plasmas, 2019, 26, .	1.9	15
17	Quasioptical modeling of wave beams with and without mode conversion. I. Basic theory. Physics of Plasmas, 2019, 26, .	1.9	29
18	Wave kinetic equation for inhomogeneous drift-wave turbulence beyond the quasilinear approximation. Journal of Plasma Physics, 2019, 85, .	2.1	12

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19	Nonlinear saturation and oscillations of collisionless zonal flows. New Journal of Physics, 2019, 21, 063009.	2.9	6
20	Formation of solitary zonal structures via the modulational instability of drift waves. Plasma Physics and Controlled Fusion, 2019, 61, 075003.	2.1	12
21	Pseudo-differential representation of the metaplectic transform and its application to fast algorithms. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2019, 36, 1846.	1.5	9
22	On the structure of the drifton phase space and its relation to the Rayleighâ€“Kuo criterion of the zonal-flow stability. Physics of Plasmas, 2018, 25, 072121.	1.9	11
23	On the Rayleighâ€“Kuo criterion for the tertiary instability of zonal flows. Physics of Plasmas, 2018, 25, 082121.	1.9	16
24	Wave kinetics of drift-wave turbulence and zonal flows beyond the ray approximation. Physical Review E, 2018, 97, 053210.	2.1	15
25	Parametric decay of plasma waves near the upper-hybrid resonance. Physics of Plasmas, 2017, 24, 032119.	1.9	10
26	Photon polarizability and its effect on the dispersion of plasma waves. Journal of Plasma Physics, 2017, 83, .	2.1	1
27	Extending geometrical optics: A Lagrangian theory for vector waves. Physics of Plasmas, 2017, 24, .	1.9	20
28	Ponderomotive dynamics of waves in quasiperiodically modulated media. Physical Review A, 2017, 95, .	2.5	15
29	Kinetic simulations of X-B and O-X-B mode conversion and its deterioration at high input power. Nuclear Fusion, 2017, 57, 116024.	3.5	11
30	Kinetic simulations of ladder climbing by electron plasma waves. Physical Review E, 2017, 95, 053212.	2.1	21
31	Mode conversion in cold low-density plasma with a sheared magnetic field. Physics of Plasmas, 2017, 24, 122116.	1.9	10
32	Backward Raman amplification of broad-band pulses. Physics of Plasmas, 2016, 23, 083115.	1.9	12
33	Zonal-flow dynamics from a phase-space perspective. Physics of Plasmas, 2016, 23, .	1.9	25
34	First-principles variational formulation of polarization effects in geometrical optics. Physical Review A, 2015, 92, .	2.5	31
35	Relativistic ponderomotive Hamiltonian of a Dirac particle in a vacuum laser field. Physical Review A, 2015, 92, .	2.5	12
36	Ladder Climbing and Autoresonant Acceleration of Plasma Waves. Physical Review Letters, 2015, 115, 075001.	7.8	11

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37	Two-stage Raman compression of laser pulses with controllable phase fronts. Physics of Plasmas, 2015, 22, 053112.	1.9	2
38	On the nature of kinetic electrostatic electron nonlinear (KEEN) waves. Physics of Plasmas, 2014, 21, 034501.	1.9	6
39	ARE PERYTONS SIGNATURES OF BALL LIGHTNING?. Astrophysical Journal, 2014, 794, 98.	4.5	3
40	Comment on â€œFormation of Phase Space Holes and Clumpsâ€• Physical Review Letters, 2014, 113, 179501.	7.8	2
41	Ponderomotive ForcesonWaves in Modulated Media. Physical Review Letters, 2014, 112, .	7.8	16
42	On Variational Methods In the Physics of Plasma Waves. Fusion Science and Technology, 2014, 65, 54-78.	1.1	24
43	On plasma rotation induced by waves in tokamaks. Physics of Plasmas, 2013, 20, 102105.	1.9	7
44	Negative-Mass Instability in Nonlinear Plasma Waves. Physical Review Letters, 2013, 110, 215006.	7.8	20
45	Nonlinear Amplification and Decay of Phase-Mixed Waves in Compressing Plasma. Physical Review Letters, 2013, 110, 055001.	7.8	14
46	Adiabatic nonlinear waves with trapped particles. III. Wave dynamics. Physics of Plasmas, 2012, 19, .	1.9	17
47	Axiomatic geometrical optics, Abraham-Minkowski controversy, and photon properties derived classically. Physical Review A, 2012, 86, .	2.5	50
48	Adiabatic nonlinear waves with trapped particles. I. General formalism. Physics of Plasmas, 2012, 19, .	1.9	22
49	Adiabatic nonlinear waves with trapped particles. II. Wave dispersion. Physics of Plasmas, 2012, 19, .	1.9	13
50	New Wave Effects in Compressing Plasma. IEEE Transactions on Plasma Science, 2011, 39, 2490-2491.	1.3	1
51	Evolution of nonlinear waves in compressing plasma. Physics of Plasmas, 2011, 18, 042103.	1.9	13
52	A Hamiltonian model of dissipative waveâ€“particle interactions and the negative-mass effect. Physics Letters, Section A: General, Atomic and Solid State Physics, 2011, 375, 1236-1241.	2.1	4
53	Nonlinear Dispersion of Stationary Waves in Collisionless Plasmas. Physical Review Letters, 2011, 107, 035005.	7.8	19
54	Evolution of the bump-on-tail instability in compressing plasma. Journal of Plasma Physics, 2011, 77, 629-638.	2.1	5

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55	Damping of linear waves via ionization and recombination in homogeneous plasmas. Physics of Plasmas, 2010, 17, .	1.9	10
56	Negative effective mass of wave-driven classical particles in dielectric media. Physical Review E, 2010, 81, 036404.	2.1	4
57	Vlasov equation and collisionless hydrodynamics adapted to curved spacetime. Physics of Plasmas, 2010, 17, 112118.	1.9	12
58	Controlling Hot Electrons by Wave Amplification and Decay in Compressing Plasma. Physical Review Letters, 2010, 105, 175003.	7.8	20
59	Supra-bubble regime for laser acceleration of cold electron beams in tenuous plasma. Physics of Plasmas, 2010, 17, .	1.9	9
60	On the evolution of linear waves in cosmological plasmas. Physical Review D, 2010, 82, .	4.7	23
61	Dressed-particle approach in the nonrelativistic classical limit. Physical Review E, 2009, 79, 026407.	2.1	13
62	Langmuir wave linear evolution in inhomogeneous nonstationary anisotropic plasma. Physics of Plasmas, 2009, 16, 112101.	1.9	36
63	Ponderomotive acceleration of hot electrons in tenuous plasmas. Physical Review E, 2009, 80, 036404.	2.1	10
64	Manleyâ€“Rowe relations for an arbitrary discrete system. Physics Letters, Section A: General, Atomic and Solid State Physics, 2008, 372, 6094-6096.	2.1	12
65	Charged particle acceleration in dense plasma channels. Physics of Plasmas, 2008, 15, .	1.9	19
66	Non-Newtonian mechanics of oscillation centers. , 2008, , .		3
67	Positive and negative effective mass of classical particles in oscillatory and static fields. Physical Review E, 2008, 77, 036402.	2.1	33
68	Particle Manipulation with Nonadiabatic Ponderomotive Forces. AIP Conference Proceedings, 2007, , .	0.4	0
69	Particle manipulation with nonadiabatic ponderomotive forces. Physics of Plasmas, 2007, 14, 055901.	1.9	12
70	Stochastic Extraction of Periodic Attosecond Bunches from Relativistic Electron Beams. Physical Review Letters, 2007, 98, 234801.	7.8	9
71	Correction to the AlfvÃ©n-Lawson criterion for relativistic electron beams. Physics of Plasmas, 2006, 13, 103104.	1.9	10
72	Nonadiabatic tunneling in ponderomotive barriers. Physical Review E, 2006, 74, 056404.	2.1	11

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73	Approximate integrals of radiofrequency-driven particle motion in a magnetic field. Journal of Plasma Physics, 2005, 71, 289-300.	2.1	12
74	Quantumlike Dynamics of Classical Particles in Ponderomotive Potentials. Physical Review Letters, 2005, 95, 115001.	7.8	10
75	Ponderomotive ratchet in a uniform magnetic field. Physical Review E, 2005, 72, 046602.	2.1	15
76	Ponderomotive barrier as a Maxwell demon. Physics of Plasmas, 2004, 11, 5046-5064.	1.9	33
77	Drift Lagrangian for a relativistic particle in an intense laser field. JETP Letters, 2003, 78, 202-206.	1.4	12
78	Relativistic electron acceleration in focused laser fields after above-threshold ionization. Physical Review E, 2003, 68, 056402.	2.1	28
79	Current Drive in a Ponderomotive Potential with Sign Reversal. Physical Review Letters, 2003, 91, 205004.	7.8	27
80	Storing, Retrieving, and Processing Optical Information by Raman Backscattering in Plasmas. Physical Review Letters, 2002, 88, 165001.	7.8	52
81	AlfvÃ©n wave tomography for cold magnetohydrodynamic plasmas. Physics of Plasmas, 2002, 9, 760-765.	1.9	1
82	Amplification of short laser pulses by Raman backscattering in capillary plasmas. Journal of Experimental and Theoretical Physics, 2002, 95, 625-638.	0.9	16
83	Motion of charged particles near magnetic-field discontinuities. Physical Review E, 2001, 64, 016405.	2.1	6