Brendan B Godfrey

List of Publications by Year
in descending order

82 papers	1,418 citations	394421 19 h-index	345221 36 g-index
84 all docs	84 docs citations	84 times ranked	813 citing authors

#	Article	IF	Citations
1	Novel approaches to suppress the numerical Cherenkov instability in Pseudo-Spectral Particle-in-Cell plasma simulation codes. , 2016, , .		0
2	Elimination of numerical Cherenkov instability in flowing-plasma particle-in-cell simulations by using Galilean coordinates. Physical Review E, 2016, 94, 053305.	2.1	28
3	Stable discrete representation of relativistically drifting plasmas. Physics of Plasmas, 2016, 23, 100704.	1.9	23
4	Review and recent advances in PIC modeling of relativistic beams and plasmas. AIP Conference Proceedings, 2016, , .	0.4	5
5	Fundamental Research and U.S. National Security [Point of View]. Proceedings of the IEEE, 2016, 104, 215-219.	21.3	0
6	A spectral, quasi-cylindrical and dispersion-free Particle-In-Cell algorithm. Computer Physics Communications, 2016, 203, 66-82.	7.5	175
7	Recent advances in high-performance modeling of plasma-based acceleration using the full PIC method. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2016, 829, 353-357.	1.6	7
8	Robert Barker Memorial Session: Leadership in Plasma Science and Applications. IEEE Transactions on Plasma Science, 2015, 43, 914-936.	1.3	9
9	Improved numerical Cherenkov instability suppression in the generalized PSTD PIC algorithm. Computer Physics Communications, 2015, 196, 221-225.	7.5	23
10	A Tribute to Dr. Robert (Bob) J. Barker 1949â€"2013. IEEE Transactions on Plasma Science, 2014, 42, 1482-1483.	1.3	1
11	Suppressing numerical cherenkov stabilities in FDTD PIC codes. , 2014, , .		0
12	Numerical Stability Improvements for the Pseudospectral EM PIC Algorithm. IEEE Transactions on Plasma Science, 2014, 42, 1339-1344.	1.3	15
13	Modeling of relativistic plasmas with the Particle-In-Cell method. Comptes Rendus - Mecanique, 2014, 342, 610-618.	2.1	11
14	Numerical stability analysis of the pseudo-spectral analytical time-domain PIC algorithm. Journal of Computational Physics, 2014, 258, 689-704.	3.8	39
15	Suppressing the numerical Cherenkov instability in FDTD PIC codes. Journal of Computational Physics, 2014, 267, 1-6.	3.8	50
16	PPPS-2013: Topic 1.2: A domain decomposition method for pseudo-spectral electromagnetic simulations of plasmas. , 2013, , .		0
17	A domain decomposition method for pseudo-spectral electromagnetic simulations of plasmas. Journal of Computational Physics, 2013, 243, 260-268.	3.8	89
18	Numerical stability of relativistic beam multidimensional PIC simulations employing the Esirkepov algorithm. Journal of Computational Physics, 2013, 248, 33-46.	3.8	60

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19	PPPS-2013: Topic 1.2: Numerical stability of the pseudospectral EM PIC algorithm. , 2013, , .		1
20	Need for Unity in Physics Prompts Call for Changes in PT. Physics Today, 1997, 50, 85-85.	0.3	0
21	Simple proof of electron beam stability in the deep-potential-well equilibrium. IEEE Transactions on Plasma Science, 1994, 22, 71-72.	1.3	1
22	Migma early-time density profiles. Physics of Fluids B, 1991, 3, 1186-1190.	1.7	1
23	Electron-beam-breakup transit-time oscillator. Physical Review Letters, 1991, 66, 3221-3224.	7.8	6
24	Computer Programs for High-Current Beam Transport in Accelerators. , 1991, , 178-205.		0
25	Electron-beam guiding by a reduced-density channel. Physical Review Letters, 1990, 65, 3128-3131.	7.8	16
26	Proton Beam Transit-Time Oscillator (TTO) For Producing High Power Microwaves. , 1989, , .		3
27	Stability Of Compact Recirculating Accelerators. Proceedings of SPIE, 1989, 1061, 489.	0.8	0
28	Linear Theory Of Transvertron Microwave Sources. Proceedings of SPIE, 1989, , .	0.8	5
29	Linear And Nonlinear Theory Of The Proton Beam Transit-Time Oscillator (TTO). Proceedings of SPIE, 1989, , .	0.8	1
30	Simulation Of Transvertron High Power Microwave Sources. , 1989, , .		2
31	Some particle beam computer programs adapted from plasma physics research. AIP Conference Proceedings, 1988, , .	0.4	0
32	High-Current Electron-Beam Transport in Recirculating Accelerators. NATO ASI Series Series B: Physics, 1988, , 257-302.	0.2	0
33	Electron beam hollowing instability simulations. Physics of Fluids, 1987, 30, 575.	1.4	6
34	Oscillatory nonlinear electron flow in a Pierce diode. Physics of Fluids, 1987, 30, 1553.	1.4	91
35	Electron beam hollowing instability threshold. Physics of Fluids, 1987, 30, 570.	1.4	3
36	Electromagnetic instability in a quadrupole-focusing accelerator. Physics of Fluids, 1986, 29, 1698.	1.4	22

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37	Long-wavelength negative mass instabilities in high current betatrons. Physics of Fluids, 1985, 28, 669.	1.4	20
38	Equilibrium and Stability Properties of the Solenoidal Lens Betatron. IEEE Transactions on Nuclear Science, 1985, 32, 2498-2500.	2.0	5
39	Laser Generation and Transport of a Relativistic Electron Beam. IEEE Transactions on Nuclear Science, 1985, 32, 3092-3094.	2.0	11
40	Axisymmetric Hollowing Instability of an Intense Relativistic Electron Beam Propagating in Air. Physical Review Letters, 1985, 55, 935-938.	7.8	12
41	Instability in a relativistic electron layer with a strong azimuthal magnetic field. Applied Physics Letters, 1985, 46, 473-475.	3.3	4
42	The Negative Mass Instability in High Current Modified Betatrons at Low Energies. IEEE Transactions on Nuclear Science, 1985, 32, 2495-2497.	2.0	2
43	Small-angle multiple scattering of charged particle beams. Physics of Fluids, 1984, 27, 1531.	1.4	28
44	Beam Breakup Instabilities in High Current Electron Beam Racetrack Induction Accelerators. IEEE Transactions on Nuclear Science, 1983, 30, 2531-2533.	2.0	1
45	Relativistic Injection into a High-Current Betatron. IEEE Transactions on Nuclear Science, 1983, 30, 2781-2783.	2.0	2
46	Linear theory and adiabatic wave amplitude variation in the converging guide accelerator. Journal of Applied Physics, 1983, 54, 3672-3676.	2.5	2
47	Analytic and Numerical Studies of the Modified Betatron. IEEE Transactions on Nuclear Science, 1983, 30, 2528-2530.	2.0	3
48	Particle Simulations of Collective Effects in High-Current Accelerators. IEEE Transactions on Nuclear Science, 1983, 30, 2389-2392.	2.0	3
49	Beam Transport Issues in High Current Linear Accelerators. IEEE Transactions on Nuclear Science, 1981, 28, 3343-3345.	2.0	10
50	EM Wave Electron Acceleration. IEEE Transactions on Nuclear Science, 1981, 28, 3395-3397.	2.0	8
51	Simulation of cyclotron wave growth in a helical slow wave structure. Physics of Fluids, 1980, 23, 2440.	1.4	14
52	Wave amplitude variation and energy flow in autoresonant collective ion acceleration. Journal of Applied Physics, 1979, 50, 2470-2475.	2.5	5
53	A Computational Study of One Aspect of Autoresonant Acceleration. IEEE Transactions on Nuclear Science, 1979, 26, 4239-4241.	2.0	0
54	A Phase Modulated Collective Ion Accelerator. IEEE Transactions on Nuclear Science, 1979, 26, 4226-4228.	2.0	0

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55	Collapse of very large amplitude ion waves. Physics of Fluids, 1979, 22, 462.	1.4	16
56	Linear Theory of Radially Inhomogeneous, Unneutralized, Relativistic Electron Beams. IEEE Transactions on Plasma Science, 1979, 7, 53-61.	1.3	16
57	Simulations of Free Electron Laser. IEEE Transactions on Nuclear Science, 1979, 26, 3833-3835.	2.0	0
58	Vacuum propagation of solid relativistic electron beams. Physics of Fluids, 1979, 22, 747.	1.4	53
59	The Localized Pinch Model as a High Energy Ion Collective Acceleration Mechanism. IEEE Transactions on Plasma Science, 1978, 6, 256-260.	1.3	3
60	Langmuir Wave Phase Velocity in Unneutralized Beams. IEEE Transactions on Plasma Science, 1978, 6, 380-383.	1.3	8
61	Collective Ion Acceleration through Temporal Modulation of Relativistic-Electron-Beam Energy. Physical Review Letters, 1978, 40, 1137-1140.	7.8	12
62	Computer Simulation of Collective Ion Acceleration by Discrete Cyclotron Modes. IEEE Transactions on Nuclear Science, 1977, 24, 1637-1639.	2.0	6
63	Numerical Simulation of Autoresonant Ion Acceleration. IEEE Transactions on Plasma Science, 1977, 5, 223-230.	1.3	5
64	Energy lost by a relativistic electron beam propagating along an external magnetic field. Physics of Fluids, 1976, 19, 316.	1.4	7
65	Comments on â€™â€™Electrostatic oscillations in plasmas with cutoff distributionsâ€™â€™. Physics of Fluids, 1976, 19, 342.	1.4	1
66	Stability of the Langdon-Dawson advective algorithm. Journal of Computational Physics, 1976, 20, 251-255.	3.8	13
67	DISCUSSION PAPER. COLLECTIVE ION ACCELERATION VIA THE TWO-STREAM INSTABILITY*. Annals of the New York Academy of Sciences, 1975, 251, 582-589.	3.8	5
68	Canonical momenta and numerical instabilities in particle codes. Journal of Computational Physics, 1975, 19, 58-76.	3.8	45
69	Collisional damping of Langmuir waves in one-dimensional plasma simulations. Plasma Physics, 1975, 17, 317-326.	0.9	3
70	Linear theory of a cold relativistic beam propagating along an external magnetic field. Physics of Fluids, 1975, 18, 346.	1.4	94
71	A Relativistic Plasma Dispersion Function. IEEE Transactions on Plasma Science, 1975, 3, 60-67.	1.3	31
72	Relativistic Linear Theory in the Absence of External Fields. IEEE Transactions on Plasma Science, 1975, 3, 68-75.	1.3	15

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73	Ion Acceleration by the Relativistic Two-Stream Instability. IEEE Transactions on Plasma Science, 1975, 3, 201-204.	1.3	7
74	Numerical Cherenkov instabilities in electromagnetic particle codes. Journal of Computational Physics, 1974, 15, 504-521.	3.8	133
75	Computer simulation of the saturation of the parametric instability in the weak turbulence regime. Physics of Fluids, 1973, 16, 2279.	1.4	6
76	Horizons in weyl metrics exhibiting extra symmetries. General Relativity and Gravitation, 1972, 3, 3-16.	2.0	29
77	Horizons and Analytic Extensions in Static Two‐Dimensional Space‐Times. Journal of Mathematical Physics, 1971, 12, 606-611.	1.1	19
78	Taub-NUT (Newman, Unti, Tamburino) Metric and Incompatible Extensions. Physical Review D, 1971, 4, 2945-2948.	4.7	31
79	Mach's Principle, the Kerr Metric, and Black-Hole Physics. Physical Review D, 1970, 1, 2721-2725.	4.7	29
80	Beam-breakup and image-displacement instability coupling impedances in high-current electron-beam induction accelerators. , 0, , .		0
81	Small-signal gain and numerical simulation of transvertron high power microwave sources. , 0, , .		4
82	Stability of compact recirculating accelerators. , 0, , .		0