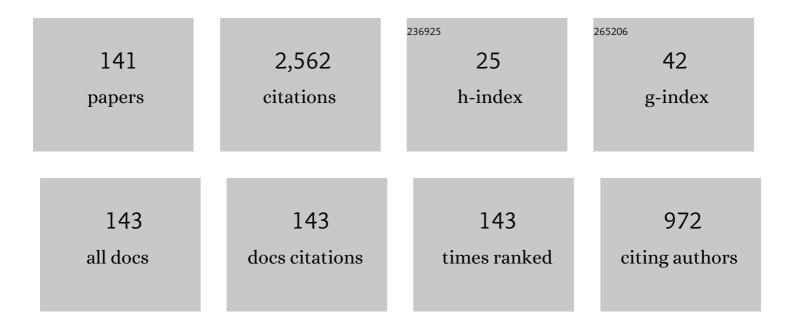
List of Publications by Year in descending order

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ALEY FRIEDMAN

#	Article	IF	CITATIONS
1	Direct implicit large time-step particle simulation of plasmas. Journal of Computational Physics, 1983, 51, 107-138.	3.8	148
2	Threeâ€dimensional particle simulation of heavyâ€ion fusion beams*. Physics of Fluids B, 1992, 4, 2203-2210.	1.7	141
3	Implicit time integration for plasma simulation. Journal of Computational Physics, 1982, 46, 15-38.	3.8	103
4	Novel methods in the Particle-In-Cell accelerator Code-Framework Warp. Computational Science & Discovery, 2012, 5, 014019.	1.5	83
5	The WARP Code: Modeling High Intensity Ion Beams. AIP Conference Proceedings, 2005, , .	0.4	71
6	Bounded Multi-scale Plasma Simulation: Application to Sheath Problems. Journal of Computational Physics, 1993, 107, 388-402.	3.8	64
7	Three-dimensional simulations of high current beams in induction accelerators with WARP3d. Fusion Engineering and Design, 1996, 32-33, 193-200.	1.9	62
8	Application of adaptive mesh refinement to particle-in-cell simulations of plasmas and beams. Physics of Plasmas, 2004, 11, 2928-2934.	1.9	58
9	New developments in WARP: Progress toward end-to-end simulation. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 1998, 415, 428-432.	1.6	57
10	Recent US advances in ion-beam-driven high energy density physics and heavy ion fusion. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2007, 577, 1-7.	1.6	52
11	A second-order implicit particle mover with adjustable damping. Journal of Computational Physics, 1990, 90, 292-312.	3.8	51
12	Theory and simulation of warm dense matter targets. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2007, 577, 275-283.	1.6	51
13	Computational Methods in the Warp Code Framework for Kinetic Simulations of Particle Beams and Plasmas. IEEE Transactions on Plasma Science, 2014, 42, 1321-1334.	1.3	46
14	High current transport experiment for heavy ion inertial fusion. Physical Review Special Topics: Accelerators and Beams, 2005, 8, .	1.8	45
15	Beam dynamics of the Neutralized Drift Compression Experiment-II, a novel pulse-compressing ion accelerator. Physics of Plasmas, 2010, 17, 056704.	1.9	44
16	Mesh refinement for particle-in-cell plasma simulations: Applications to and benefits for heavy ion fusion. Laser and Particle Beams, 2002, 20, 569-575.	1.0	41
17	Toward a physics design for NDCX-II, an ion accelerator for warm dense matter and HIF target physics studies. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2009, 606, 6-10.	1.6	38
18	Recirculating induction accelerators as drivers for heavy ion fusion*. Physics of Fluids B, 1993, 5, 2698-2706.	1.7	36

#	Article	IF	CITATIONS
19	Physics of neutralization of intense high-energy ion beam pulses by electrons. Physics of Plasmas, 2010, 17, .	1.9	36
20	Multi-scale particle-in-cell plasma simulation. Journal of Computational Physics, 1991, 96, 54-70.	3.8	34
21	Induction accelerator architectures for heavy-ion fusion. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 1998, 415, 218-228.	1.6	30
22	Long-time behaviour of numerically computed orbits: Small and intermediate timestep analysis of one-dimensional systems. Journal of Computational Physics, 1991, 93, 189-223.	3.8	28
23	Ballistic-neutralized chamber transport of intense heavy ion beams. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2001, 464, 299-304.	1.6	28
24	Vlasov simulations of beams with a moving grid. Computer Physics Communications, 2004, 164, 390-395.	7.5	28
25	Numerical simulation of intense-beam experiments at LLNL and LBNL. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 1998, 415, 345-356.	1.6	27
26	Implementations of mesh refinement schemes for Particle-In-Cell plasma simulations. Computer Physics Communications, 2004, 164, 297-305.	7.5	27
27	Overview of US heavy ion fusion research. Nuclear Fusion, 2005, 45, 131-137.	3.5	27
28	Recent progress in the simulation of heavy ion beams. Physics of Plasmas, 1999, 6, 2254-2261.	1.9	26
29	Plans for longitudinal and transverse neutralized beam compression experiments, and initial results from solenoid transport experiments. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2007, 577, 215-222.	1.6	25
30	Time-Step Considerations in Particle Simulation Algorithms for Coulomb Collisions in Plasmas. IEEE Transactions on Plasma Science, 2010, 38, 2394-2406.	1.3	25
31	Progress toward source-to-target simulation. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2001, 464, 563-568.	1.6	24
32	Simulating electron clouds in heavy-ion accelerators. Physics of Plasmas, 2005, 12, 056708.	1.9	23
33	A linearized 3D hybrid code for stability studies of field-reversed ion rings. Journal of Computational Physics, 1981, 40, 1-35.	3.8	22
34	Integrated experiments for heavy ion fusion. Laser and Particle Beams, 2003, 21, 553-560.	1.0	22
35	Ion-beam-driven warm dense matter experiments. Journal of Physics: Conference Series, 2010, 244, 032028.	0.4	22
36	Simulation of heavy ion beams with a semi-Lagrangian Vlasov solver. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2001, 464, 470-476.	1.6	20

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37	Diagnostics for intense heavy-ion beams in the HIF-VNL. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2005, 544, 268-276.	1.6	20
38	Simulation studies of non-neutral plasma equilibria in an electrostatic trap with a magnetic mirror. Physics of Plasmas, 2007, 14, 052107.	1.9	20
39	Numerical simulation of strong proton rings. Plasma Physics, 1977, 19, 1101-1117.	0.9	19
40	Numerically induced stochasticity. Journal of Computational Physics, 1991, 93, 171-188.	3.8	19
41	Short intense ion pulses for materials and warm dense matter research. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2015, 800, 98-103.	1.6	19
42	Heavy ion fusion (HIF) driver point designs. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2005, 544, 294-299.	1.6	18
43	Absolute Measurement of Electron-Cloud Density in a Positively Charged Particle Beam. Physical Review Letters, 2006, 97, 054801.	7.8	18
44	lon beam heated target simulations for warm dense matter physics and inertial fusion energy. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2009, 606, 134-138.	1.6	18
45	The NDCX-II engineering design. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2014, 733, 226-232.	1.6	18
46	Simulation studies of transverse resonance effects in space-charge-dominated beams. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 1998, 415, 455-459.	1.6	17
47	Progress in heavy ion fusion research. Physics of Plasmas, 2003, 10, 2064-2070.	1.9	17
48	Noiseless Vlasov–Poisson simulations with linearly transformed particles. Journal of Computational Physics, 2014, 275, 236-256.	3.8	17
49	Beam simulations for IRE and driver—status and strategy. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2001, 464, 653-661.	1.6	16
50	Overview of US heavy-ion fusion progress and plans. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2005, 544, 1-8.	1.6	16
51	Smoothing and spatial grid effects in implicit particle simulation. Journal of Computational Physics, 1984, 56, 51-64.	3.8	15
52	Characteristics of an electrostatic instability driven by transverse–longitudinal temperature anisotropy. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 1998, 415, 405-410.	1.6	15
53	Cold phase fluid model of the longitudinal dynamics of space-charge-dominated beams. Physics of Plasmas, 2003, 10, 855-861.	1.9	15
54	Electron-cloud simulation and theory for high-current heavy-ion beams. Physical Review Special Topics: Accelerators and Beams, 2004, 7, .	1.8	15

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55	2-MV electrostatic quadrupole injector for heavy-ion fusion. Physical Review Special Topics: Accelerators and Beams, 2005, 8, .	1.8	15
56	Heavy-ion-fusion-science: summary of US progress. Nuclear Fusion, 2007, 47, 721-727.	3.5	15
57	Simulations of plasma confinement in an antihydrogen trap. Physics of Plasmas, 2007, 14, 102111.	1.9	15
58	Large-timestep mover for particle simulations of arbitrarily magnetized species. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2007, 577, 52-57.	1.6	15
59	Transverse-longitudinal temperature equilibration in a long uniform beam. Fusion Engineering and Design, 1996, 32-33, 169-174.	1.9	14
60	Overview of theory and modeling in the heavy ion fusion virtual national laboratory. Laser and Particle Beams, 2002, 20, 377-384.	1.0	14
61	Use of projectional phase space data to infer a 4D particle distribution. Laser and Particle Beams, 2003, 21, 17-20.	1.0	14
62	Irradiation of materials with short, intense ion pulses at NDCX-II. Laser and Particle Beams, 2017, 35, 373-378.	1.0	14
63	Numerical stimulation of injection and resistive trapping of ion rings. Plasma Physics, 1981, 23, 521-537.	0.9	13
64	Collective space-charge phenomena in the source region. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2004, 519, 396-404.	1.6	13
65	Energy amplification and beam bunching in a pulse line ion accelerator. Physical Review Special Topics: Accelerators and Beams, 2006, 9, .	1.8	13
66	Beam energy scaling of ion-induced electron yield fromK+impact on stainless steel. Physical Review Special Topics: Accelerators and Beams, 2006, 9, .	1.8	12
67	A method for obtaining three-dimensional computational equilibrium of non-neutral plasmas using WARP. Journal of Computational Physics, 2007, 225, 1736-1752.	3.8	12
68	Warp simulations for capture and control of laser-accelerated proton beams. Journal of Physics: Conference Series, 2010, 244, 022052.	0.4	12
69	Development and testing of a pulsed helium ion source for probing materials and warm dense matter studies. Review of Scientific Instruments, 2016, 87, 02B707.	1.3	12
70	Recirculating induction accelerators for inertial fusion: prospects and status. Fusion Engineering and Design, 1996, 32-33, 235-246.	1.9	11
71	Planning for an integrated research experiment. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2001, 464, 621-628.	1.6	11
72	Overview of virtual national laboratory objectives, plans, and projects. Laser and Particle Beams, 2002, 20, 369-375.	1.0	11

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73	Beam experiments on the Pulse Line Ion Accelerator. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2007, 577, 197-202.	1.6	11
74	Neutralized drift compression experiments with a high-intensity ion beam. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2007, 577, 223-230.	1.6	11
75	NDCX-II target experiments and simulations. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2014, 733, 45-50.	1.6	11
76	Effect of Multiple Scattering on the Compton Recoil Current Generated in an EMP, Revisited. IEEE Transactions on Nuclear Science, 2015, 62, 1695-1706.	2.0	11
77	Physics design and scaling of recirculating induction accelerators: from benchtop prototypes to drivers. Fusion Engineering and Design, 1996, 32-33, 247-258.	1.9	10
78	Physics design and scaling of Elise. Fusion Engineering and Design, 1996, 32-33, 323-335.	1.9	10
79	The High Current Transport Experiment for heavy-ion inertial fusion. , 0, , .		10
80	Simulation of intense beams for Heavy Ion Fusion. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2005, 544, 160-170.	1.6	10
81	Research and development toward heavy ion driven inertial fusion energy. Physical Review Special Topics: Accelerators and Beams, 2013, 16, .	1.8	10
82	Self-consistent simulations of heavy-ion beams interacting with electron-clouds. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2007, 577, 65-69.	1.6	9
83	Status of experiments leading to a small recirculator. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 1998, 415, 310-314.	1.6	8
84	Results from the recirculator project at LLNL. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2001, 464, 557-562.	1.6	8
85	Initial experimental studies of electron accumulation in a heavy-ion beam. , 0, , .		8
86	Experimental studies of electrons in a heavy-ion beam. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2005, 544, 194-201.	1.6	8
87	Measurement and simulation of the UMER beam in the source region. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2005, 544, 441-446.	1.6	8
88	Beam interaction measurements with a Retarding Field Analyzer in a high-current high-vacuum positively charged particle accelerator. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2007, 577, 139-145.	1.6	8
89	Developing acceleration schedules for NDCX-II*. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2009, 606, 97-101.	1.6	8
90	Strong ion ring equilibria formed by injection and intrinsic stochasticity of orbits. Journal of Computational Physics, 1981, 44, 104-133.	3.8	7

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91	Heavy ion inertial fusion Report on the International Symposium held at Monterey, California, United States of America, 3–6 December 1990. Nuclear Fusion, 1991, 31, 1567-1578.	3.5	7
92	Filling in the Roadmap for Self-Consistent Electron Cloud and Gas Modeling. , 0, , .		7
93	US heavy ion beam research for high energy density physics applications and fusion. European Physical Journal Special Topics, 2006, 133, 731-741.	0.2	7
94	Effects of errors in velocity tilt on maximum longitudinal compression during neutralized drift compression of intense beam pulses: I. general description. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2012, 678, 48-63.	1.6	7
95	Short-pulse, compressed ion beams at the Neutralized Drift Compression Experiment. Journal of Physics: Conference Series, 2016, 717, 012079.	0.4	7
96	Optimizing beam transport in rapidly compressing beams on the neutralized drift compression experiment-II. Matter and Radiation at Extremes, 2018, 3, 78-84.	3.9	7
97	Effects of longitudinal space charge in beams for heavy-ion fusion. Fusion Engineering and Design, 1996, 32-33, 201-208.	1.9	6
98	The longitudinal wall impedance instability in a heavy-ion fusion driver. Journal of Applied Physics, 1997, 81, 3398-3409.	2.5	6
99	Methods used in WARP3d, a three-dimensional PIC/Accelerator code. , 1997, , .		6
100	Simulating electron clouds in high-current ion accelerators with solenoid focusing. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2007, 577, 146-149.	1.6	6
101	On numerical energy conservation for an implicit particle-in-cell method coupled with a binary Monte-Carlo algorithm for Coulomb collisions. Journal of Computational Physics, 2022, 456, 111030.	3.8	6
102	Stability of field-reversed ion rings. Physics of Fluids, 1986, 29, 3317.	1.4	5
103	Recent progress in heavy ion fusion simulations. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2001, 464, 343-350.	1.6	5
104	Simulating electron cloud effects in heavy-ion beams. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2005, 544, 210-215.	1.6	5
105	Overview of theory and simulations in the Heavy Ion Fusion Science Virtual National Laboratory. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2007, 577, 37-44.	1.6	5
106	Effects of errors in velocity tilt on maximum longitudinal compression during neutralized drift compression of intense beam pulses: II. Analysis of experimental data of the Neutralized Drift Compression eXperiment-I (NDCX-I). Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2012, 678, 39-47.	1.6	5
107	Ferroelectric plasma sources for NDCX-II and heavy ion drivers. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2014, 733, 75-79.	1.6	5

108 Transverse-longitudinal energy equilibration in a long uniform beam. , 0, , .

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109	Stray-electron accumulation and effects in HIF accelerators. , 0, , .		4
110	Simulation using initial 4D beam particle distributions synthesized from experimental data. , 0, , .		4
111	Experimental study of the transport limits of intense heavy ion beams in the HCX. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2005, 544, 151-159.	1.6	4
112	Quantitative experiments with electrons in a positively charged beam. Physics of Plasmas, 2007, 14, 056701.	1.9	4
113	Measurement and simulation of the time-dependent behavior of the UMER source. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2007, 577, 157-160.	1.6	4
114	Heavy ion fusion science research for high energy density physics and fusion applications. Journal of Physics: Conference Series, 2008, 112, 032029.	0.4	4
115	Multiple beam induction accelerators for heavy ion fusion. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2014, 733, 193-199.	1.6	4
116	Design and implementation of a Thomson parabola for fluence dependent energy-loss measurements at the Neutralized Drift Compression eXperiment. Review of Scientific Instruments, 2018, 89, 103302.	1.3	4
117	The ILSE experimental program. Il Nuovo Cimento A, 1993, 106, 1631-1636.	0.2	3
118			3
119	Application of adaptive mesh refinement to PIC simulations in heavy ion fusion. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2005, 544, 347-352.	1.6	3
120	Studies of the pulse line ion accelerator. , 2007, , .		3
121	Simulations for experimental study of warm dense matter and inertial fusion energy applications on NDCX-II. Journal of Physics: Conference Series, 2010, 244, 032027.	0.4	3
122	Sheet beam model for intense space charge: Application to Debye screening and the distribution of particle oscillation frequencies in a thermal equilibrium beam. Physical Review Special Topics: Accelerators and Beams, 2011, 14, .	1.8	3
123	Simulations of ion beams for NDCX-II. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2014, 733, 134-140.	1.6	3
124	What we have learned from 3D andr, z intense-beam simulations using the WARP code. Il Nuovo Cimento A, 1993, 106, 1649-1655.	0.2	2
125	Particle-in-cell simulations of the high current experiment. , 0, , .		2
126	Quantitative electron and gas cloud experiments. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2007, 577, 45-51.	1.6	2

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127	An implicit "drift-Lorentz―mover for plasma and beam simulations. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2009, 606, 53-55.	1.6	2
128	Arc-based smoothing of ion beam intensity on targets. Physics of Plasmas, 2012, 19, 063111.	1.9	2
129	Nonparaxial pulse broadening in a solenoid focusing element. Physical Review Special Topics: Accelerators and Beams, 2012, 15, .	1.8	2
130	Modeling warm dense matter experiments using the 3D ALE-AMR code and the move toward exascale computing. EPJ Web of Conferences, 2013, 59, 09006.	0.3	2
131	Monte Carlo calculation of large and small-angle electron scattering in air. Journal of Computational Physics, 2017, 349, 582-588.	3.8	2
132	Longitudinal beam dynamics for heavy ion fusion using WARPrz. AIP Conference Proceedings, 1993, , .	0.4	1
133	"Thick-Slice―simulation of short longitudinal-scale phenomena on a space-charge-dominated beam. , 1997, , .		1
134	Modeling the pulse line ion accelerator (PLIA): an algorithm for quasi-static field solution. , 2007, , .		1
135	Alternate operating scenarios for NDCX-II. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2014, 733, 147-152.	1.6	1
136	Surface tension models for a multi-material ALE code with AMR. Computers and Fluids, 2017, 151, 91-101.	2.5	1
137	Application of Particle Simulation Codes to Fusion Reactor Engineering. Nuclear Technology/Fusion, 1983, 3, 287-292.	0.5	0
138	Electron cloud measurements in heavy-ion driver for HEDP and inertial fusion energy. Nuclear Instruments & Methods in Physics Research B, 2007, 261, 980-985.	1.4	0
139	Pulse line ion accelerator based design for the neutralized drift chamber experiment. Physical Review Special Topics: Accelerators and Beams, 2009, 12, .	1.8	0
140	Numerical Modeling of Complex Targets for High-Energy- Density Experiments with Ion Beams and other Drivers. Journal of Physics: Conference Series, 2016, 688, 012053.	0.4	0
141	First energy loss measurements of intense pulsed ion beams in matter using a Thomson parabola at NDCX-II. , 2018, , .		0