

Mark Sherlock

List of Publications by Year in descending order

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72
papers

1,994
citations

218677

26
h-index

254184

43
g-index

72
all docs

72
docs citations

72
times ranked

1479
citing authors

#	ARTICLE	IF	CITATIONS
1	Magnetic Reconnection and Plasma Dynamics in Two-Beam Laser-Solid Interactions. <i>Physical Review Letters</i> , 2006, 97, 255001.	7.8	220
2	Absorption of Short Laser Pulses on Solid Targets in the Ultrarelativistic Regime. <i>Physical Review Letters</i> , 2008, 100, 085004.	7.8	172
3	Magnetic collimation of fast electrons produced by ultraintense laser irradiation by structuring the target composition. <i>Physics of Plasmas</i> , 2007, 14, .	1.9	128
4	Fast electron transport in laser-produced plasmas and the KALOS code for solution of the Vlasov-Fokker-Planck equation. <i>Plasma Physics and Controlled Fusion</i> , 2006, 48, R37-R57.	2.1	90
5	Theory of fast electron transport for fast ignition. <i>Nuclear Fusion</i> , 2014, 54, 054003.	3.5	86
6	Artificial Collimation of Fast-Electron Beams with Two Laser Pulses. <i>Physical Review Letters</i> , 2008, 100, 025002.	7.8	66
7	Production of radiatively cooled hypersonic plasma jets and links to astrophysical jets. <i>Plasma Physics and Controlled Fusion</i> , 2005, 47, B465-B479.	2.1	65
8	Proton deflectometry of a magnetic reconnection geometry. <i>Physics of Plasmas</i> , 2010, 17, .	1.9	65
9	Dynamics of cylindrically converging precursor plasma flow in wire-array Z-pinch experiments. <i>Physical Review E</i> , 2006, 74, 046403.	2.1	62
10	A review of Vlasov-Fokker-Planck numerical modeling of inertial confinement fusion plasma. <i>Journal of Computational Physics</i> , 2012, 231, 1051-1079.	3.8	60
11	Bidirectional jet formation during driven magnetic reconnection in two-beam laser-plasma interactions. <i>Physics of Plasmas</i> , 2008, 15, .	1.9	57
12	Fast Advection of Magnetic Fields by Hot Electrons. <i>Physical Review Letters</i> , 2010, 105, 095001.	7.8	48
13	Testing nonlocal models of electron thermal conduction for magnetic and inertial confinement fusion applications. <i>Physics of Plasmas</i> , 2017, 24, .	1.9	48
14	Universal scaling of the electron distribution function in one-dimensional simulations of relativistic laser-plasma interactions. <i>Physics of Plasmas</i> , 2009, 16, .	1.9	46
15	High-energy (>70 keV) x-ray conversion efficiency measurement on the ARC laser at the National Ignition Facility. <i>Physics of Plasmas</i> , 2017, 24, .	1.9	45
16	A comparison of non-local electron transport models for laser-plasmas relevant to inertial confinement fusion. <i>Physics of Plasmas</i> , 2017, 24, .	1.9	41
17	Supersonic Radiatively Cooled Rotating Flows and Jets in the Laboratory. <i>Physical Review Letters</i> , 2008, 100, 035001.	7.8	40
18	Measurements of fast electron scaling generated by petawatt laser systems. <i>Physics of Plasmas</i> , 2009, 16, .	1.9	40

#	ARTICLE	IF	CITATIONS
19	Ultrafast Imaging of Laser Driven Shock Waves using Betatron X-rays from a Laser Wakefield Accelerator. <i>Scientific Reports</i> , 2018, 8, 11010.	3.3	40
20	Observation of Nonlocal Heat Flux Using Thomson Scattering. <i>Physical Review Letters</i> , 2018, 121, 125001.	7.8	36
21	A Monte-Carlo method for coulomb collisions in hybrid plasma models. <i>Journal of Computational Physics</i> , 2008, 227, 2286-2292.	3.8	33
22	In-depth Plasma-Wave Heating of Dense Plasma Irradiated by Short Laser Pulses. <i>Physical Review Letters</i> , 2014, 113, 255001.	7.8	28
23	Developing an Experimental Basis for Understanding Transport in NIF Hohlraum Plasmas. <i>Physical Review Letters</i> , 2018, 121, 095002.	7.8	28
24	Ion collisions and the Z-pinch precursor column. <i>Physics of Plasmas</i> , 2004, 11, 1609-1616.	1.9	27
25	Recent fast electron energy transport experiments relevant to fast ignition inertial fusion. <i>Nuclear Fusion</i> , 2009, 49, 104023.	3.5	27
26	Measurements of Non-Maxwellian Electron Distribution Functions and Their Effect on Laser Heating. <i>Physical Review Letters</i> , 2021, 127, 015001.	7.8	26
27	Suppression of the Biermann Battery and Stabilization of the Thermomagnetic Instability in Laser Fusion Conditions. <i>Physical Review Letters</i> , 2020, 124, 055001.	7.8	25
28	Plasma heating by intense electron beams in fast ignition. <i>Plasma Physics and Controlled Fusion</i> , 2008, 50, 065005.	2.1	20
29	Evolution of the Electron Distribution Function in the Presence of Inverse Bremsstrahlung Heating and Collisional Ionization. <i>Physical Review Letters</i> , 2020, 124, 025001.	7.8	19
30	Production of relativistic electrons at subrelativistic laser intensities. <i>Physical Review E</i> , 2020, 101, 031201.	2.1	18
31	Self-consistent inclusion of classical large-angle Coulomb collisions in plasma Monte Carlo simulations. <i>Journal of Computational Physics</i> , 2015, 299, 144-155.	3.8	17
32	Plasma Currents and Electron Distribution Functions under a dc Electric Field of Arbitrary Strength. <i>Physical Review Letters</i> , 2008, 100, 185001.	7.8	14
33	Superluminal sheath-field expansion and fast-electron-beam divergence measurements in laser-solid interactions. <i>Physical Review E</i> , 2011, 83, 036404.	2.1	14
34	Incorporating kinetic effects on Nernst advection in inertial fusion simulations. <i>Plasma Physics and Controlled Fusion</i> , 2018, 60, 084009.	2.1	14
35	Absorption of ultra-short laser pulses and particle transport in dense targets. <i>Laser and Particle Beams</i> , 2006, 24, 231-234.	1.0	13
36	Ultrafast collisional ion heating by electrostatic shocks. <i>Nature Communications</i> , 2015, 6, 8905.	12.8	13

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37	Measuring heat flux from collective Thomson scattering with non-Maxwellian distribution functions. <i>Physics of Plasmas</i> , 2019, 26, .	1.9	13
38	Generalized Ohm's Law for a Background Plasma in the Presence of Relativistic Charged Particles. <i>Physical Review Letters</i> , 2010, 104, 205004.	7.8	12
39	Effect of transverse density modulations on fast electron transport in dense plasmas. <i>Plasma Physics and Controlled Fusion</i> , 2008, 50, 065019.	2.1	11
40	The persistence of Maxwellian D and T distributions during burn in inertial confinement fusion. <i>High Energy Density Physics</i> , 2009, 5, 27-30.	1.5	11
41	Return current instability driven by a temperature gradient in ICF plasmas. <i>Plasma Physics and Controlled Fusion</i> , 2018, 60, 014004.	2.1	11
42	Laboratory Modeling of Standing Shocks and Radiatively Cooled Jets with Angular Momentum. <i>Astrophysics and Space Science</i> , 2007, 307, 51-56.	1.4	10
43	Hybrid Vlasov-Fokker-Planck Maxwell simulations of fast electron transport and the time dependence of K -shell excitation in a mid- Z metallic target. <i>New Journal of Physics</i> , 2013, 15, 015017.	2.9	10
44	Self-Generated Magnetic and Electric Fields at a Mach-6 Shock Front in a Low Density Helium Gas by Dual-Angle Proton Radiography. <i>Physical Review Letters</i> , 2019, 123, 215001.	7.8	10
45	Statistical analysis of non-Maxwellian electron distribution functions measured with angularly resolved Thomson scattering. <i>Physics of Plasmas</i> , 2021, 28, .	1.9	10
46	Non-Spitzer return currents in intense laser-plasma interactions. <i>Physics of Plasmas</i> , 2007, 14, 102708.	1.9	9
47	Influence of atomic kinetics on inverse bremsstrahlung heating and nonlocal thermal transport. <i>Physical Review E</i> , 2019, 100, 013202.	2.1	9
48	Modification of classical electron transport due to collisions between electrons and fast ions. <i>Physics of Plasmas</i> , 2019, 26, .	1.9	9
49	Prediction of Net Energy Gain in Deuterium-Beam Interactions with an Inertially Confined Plasma. <i>Physical Review Letters</i> , 2007, 99, 255003.	7.8	8
50	A Monte Carlo algorithm for degenerate plasmas. <i>Journal of Computational Physics</i> , 2013, 249, 13-21.	3.8	8
51	Magnetic field transport in propagating thermonuclear burn. <i>Physics of Plasmas</i> , 2021, 28, .	1.9	8
52	Effects of Large-Angle Coulomb Collisions on Inertial Confinement Fusion Plasmas. <i>Physical Review Letters</i> , 2014, 112, 245002.	7.8	7
53	Electron energy deposition to the fusion target core for fast ignition. <i>Journal of Physics: Conference Series</i> , 2010, 244, 022070.	0.4	6
54	Laboratory astrophysics: 2D and 3D numerical modeling of jets and flows produced in wire array experiments. <i>AIP Conference Proceedings</i> , 2004, , .	0.4	5

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55	Laboratory Modeling of Radiatively Cooled Jets Using Conical Wire Array Z-pinchs. AIP Conference Proceedings, 2004, , .	0.4	4
56	Effect of reentrant cone geometry on energy transport in intense laser-plasma interactions. Physical Review E, 2009, 80, 045401.	2.1	4
57	Vlasov-Fokker-Planck simulations of fast-electron transport with hydrodynamic plasma response. Journal of Physics: Conference Series, 2010, 244, 022042.	0.4	4
58	Deflection of Supersonic Plasma Jets by Ionised Hydrocarbon Targets. AIP Conference Proceedings, 2002, , .	0.4	3
59	Acid-base balance in field cases of bovine babesiosis. Veterinary Record, 2003, 152, 687-688.	0.3	3
60	Proton probe measurement of fast advection of magnetic fields by hot electrons. Plasma Physics and Controlled Fusion, 2011, 53, 124026.	2.1	3
61	Kinetic simulations of the heating of solid density plasma by femtosecond laser pulses. High Energy Density Physics, 2013, 9, 38-41.	1.5	3
62	Characterization of thermal transport and evolution of Au plasma in ICF experiments by Thomson scattering. Physics of Plasmas, 2022, 29, 012304.	1.9	3
63	3D Resistive, Radiative MHD Modeling of Z-pinchs. AIP Conference Proceedings, 2006, , .	0.4	2
64	A Kinetic Description of Ions in Aluminium Wire-Array Precursor Plasma. AIP Conference Proceedings, 2002, , .	0.4	1
65	Plasma Ablation and Precursor Column Formation in Wire-Array Z-Pinchs. AIP Conference Proceedings, 2006, , .	0.4	1
66	Ultrashort laser pulse absorption and target heating. , 2009, , .		1
67	Measurement of fast electrons spectra generated by interaction between solid target and peta watt laser. Journal of Physics: Conference Series, 2010, 244, 022067.	0.4	1
68	Effect of defocusing on picosecond laser-coupling into gold cones. Physics of Plasmas, 2014, 21, 012702.	1.9	1
69	Sherlock<i>etÂal.</i>Reply:. Physical Review Letters, 2016, 116, 159502.	7.8	1
70	Laboratory Modeling of Standing Shocks and Radiatively Cooled Jets with Angular Momentum. , 2006, , 51-56.		1
71	Why do Wire-Array Z-Pinchs give such a Sharp and Efficient X-Ray Pulse?. AIP Conference Proceedings, 2002, , .	0.4	0
72	Efficient evaluation of collisional energy transfer terms for plasma particle simulations. Journal of Plasma Physics, 2016, 82, .	2.1	0