

# J L Giuliani

## List of Publications by Year in descending order

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134  
papers

1,636  
citations

304743

22  
h-index

315739

38  
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135  
all docs

135  
docs citations

135  
times ranked

875  
citing authors

#	ARTICLE	IF	CITATIONS
1	Review of pulsed power-driven high energy density physics research on Z at Sandia. Physics of Plasmas, 2020, 27, .	1.9	140
2	A Review of the Gas-Puff $Z$ -Pinch as an X-Ray and Neutron Source. IEEE Transactions on Plasma Science, 2015, 43, 2385-2453.	1.3	98
3	Model of enhanced energy deposition in a Z-pinch plasma. Physics of Plasmas, 2000, 7, 3265-3277.	1.9	85
4	An efficient tabulated collisional radiative equilibrium radiation transport model suitable for multidimensional hydrodynamics calculations. Physics of Plasmas, 2001, 8, 3480-3489.	1.9	74
5	Electron-impact excitation from the ground and the metastable levels of Ar I. Physical Review A, 1999, 61, .	2.5	72
6	Mitigation of Instabilities in a Z-Pinch Plasma by a Preembedded Axial Magnetic Field. IEEE Transactions on Plasma Science, 2014, 42, 2524-2525.	1.3	70
7	A Renewed Capability for Gas Puff Science on Sandia's Z Machine. IEEE Transactions on Plasma Science, 2014, 42, 1145-1152.	1.3	62
8	Influence of K-shell dynamics on K-shell yields for imploding krypton Z-pinch plasmas. Physics of Plasmas, 1995, 2, 1766-1774.	1.9	57
9	The Science and Technologies for Fusion Energy With Lasers and Direct-Drive Targets. IEEE Transactions on Plasma Science, 2010, 38, 690-703.	1.3	51
10	Evolution of MHD Instabilities in Plasma Imploding Under Magnetic Field. IEEE Transactions on Plasma Science, 2011, 39, 2392-2393.	1.3	46
11	Efficient electron beam deposition in the gas cell of the Electra laser. Physics of Plasmas, 2004, 11, 5010-5021.	1.9	43
12	2-D RMHD Modeling Assessment of Current Flow, Plasma Conditions, and Doppler Effects in Recent Z Argon Experiments. IEEE Transactions on Plasma Science, 2015, 43, 2480-2491.	1.3	42
13	Optimization of K-shell emission in aluminum-z-pinch implosions: Theory versus experiment. Physical Review E, 1994, 50, 2166-2174.	2.1	40
14	Ion Temperature and Hydrodynamic-Energy Measurements in a $Z$ -Pinch Plasma at Stagnation. Physical Review Letters, 2011, 107, 105001.	7.8	40
15	Electron beam pumped KrF lasers for fusion energy. Physics of Plasmas, 2003, 10, 2142-2146.	1.9	38
16	Model of a two-stage rf plasma reactor for SiC deposition. Journal of Applied Physics, 2001, 90, 619-636.	2.5	36
17	Contrasting physics in wire array z pinch sources of 1-20 keV emission on the Z facility. Physics of Plasmas, 2014, 21, .	1.9	36
18	Electron energy deposition in an electron-beam pumped KrF amplifier: Impact of beam power and energy. Journal of Applied Physics, 2002, 91, 2662-2677.	2.5	34

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19	Effects of a Preembedded Axial Magnetic Field on the Current Distribution in a $Z$ -Pinch Implosion. <i>Physical Review Letters</i> , 2019, 122, 045001.	7.8	29
20	Magnetic flux and heat losses by diffusive, advective, and Nernst effects in magnetized liner inertial fusion-like plasma. <i>Physics of Plasmas</i> , 2015, 22, .	1.9	28
21	Electron-impact excitation from the $4p55s$ metastable states of krypton. <i>Physical Review A</i> , 2002, 65, .	2.5	24
22	Electra: Repetitively pulsed, 500 J, 100 ns, KrF oscillator. <i>Applied Physics Letters</i> , 2004, 84, 326-328.	3.3	24
23	Electron energy deposition in an electron-beam pumped KrF amplifier: Impact of the gas composition. <i>Journal of Applied Physics</i> , 2002, 92, 1200-1206.	2.5	22
24	Exact self-similar solutions for the magnetized Noh $Z$ pinch problem. <i>Physics of Plasmas</i> , 2012, 19, .	1.9	22
25	Opacity and gradients in aluminum wire array z-pinch implosions on the Z pulsed power facility. <i>Physics of Plasmas</i> , 2014, 21, 031201.	1.9	22
26	Electron-impact excitation to the $4p55s$ and $4p55p$ levels of Kr I using different distorted-wave and close-coupling methods. <i>Physical Review A</i> , 2001, 64, .	2.5	21
27	Simulation of amplified spontaneous emission in high gain KrF laser amplifiers. <i>Journal of Applied Physics</i> , 2003, 94, 31-43.	2.5	20
28	The effect of gradients at stagnation on K-shell x-ray line emission in high-current Ar gas-puff implosions. <i>Physics of Plasmas</i> , 2015, 22, 020706.	1.9	20
29	Pulse shaping and energy storage capabilities of angularly multiplexed KrF laser fusion drivers. <i>Journal of Applied Physics</i> , 2009, 106, .	2.5	18
30	Effective versus ion thermal temperatures in the Weizmann Ne $Z$ -pinch: Modeling and stagnation physics. <i>Physics of Plasmas</i> , 2014, 21, .	1.9	18
31	Local measurements of the spatial magnetic field distribution in a z-pinch plasma during and near stagnation using polarization spectroscopy. <i>Physics of Plasmas</i> , 2020, 27, .	1.9	18
32	Inhomogeneous model of an Ar-Hg direct current column discharge. <i>Journal of Applied Physics</i> , 2003, 94, 62-75.	2.5	17
33	Ultrahigh vacuum arcjet nitrogen source for selected energy epitaxy of group III nitrides by molecular beam epitaxy. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 1998, 16, 1615-1620.	2.1	16
34	One- and two-dimensional modeling of argon K-shell emission from gas-puff $Z$ -pinch plasmas. <i>Physics of Plasmas</i> , 2007, 14, 063301.	1.9	16
35	Optimizing the Ar-Xe infrared laser on the Naval Research Laboratory's Electra generator. <i>Journal of Applied Physics</i> , 2008, 104, .	2.5	14
36	Analysis of spatially resolved $Z$ -pinch spectra to investigate the nature of "bright spots". <i>Physics of Plasmas</i> , 2013, 20, .	1.9	14

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37	Forced Convective Cooling of Foils in a Repetitively Pulsed Electron-Beam Diode. IEEE Transactions on Plasma Science, 2008, 36, 778-793.	1.3	13
38	Investigating the effect of adding an on-axis jet to Ar gas puff Z pinches on Z. Physics of Plasmas, 2016, 23, .	1.9	13
39	Ultrashort pulse laser-produced Al/Si plasma. Laser and Particle Beams, 1995, 13, 3-18.	1.0	9
40	Stability of stagnation via an expanding accretion shock wave. Physics of Plasmas, 2016, 23, .	1.9	9
41	Comparison of coolants for achieving short-wavelength recombination lasing. Journal of Applied Physics, 1990, 68, 33-40.	2.5	8
42	Development of a Continuous Multi-Thousand Shot Electron Beam Pumped KrF Rep-Rate Laser for Fusion Energy. Fusion Science and Technology, 2007, 52, 445-453.	1.1	8
43	Electra: durable repetitively pulsed 700 J, 100 ns electron beam pumped KrF laser system. , 2007, , .		8
44	Electra: An Electron Beam Pumped KrF Rep-Rate Laser System for Inertial Fusion Energy. Fusion Science and Technology, 2009, 56, 346-351.	1.1	8
45	Simulations of Ar gas-puff Z-pinch radiation sources with double shells and central jets on the Z generator. Physics of Plasmas, 2016, 23, .	1.9	8
46	Nernst thermomagnetic waves in magnetized high energy density plasmas. Physics of Plasmas, 2019, 26, .	1.9	8
47	Producing Kiloelectronvolt L-Shell Plasmas on Zebra at UNR. IEEE Transactions on Plasma Science, 2012, 40, 3347-3353.	1.3	7
48	Solution of the Noh problem with an arbitrary equation of state. Physical Review E, 2018, 98, 013105.	2.1	7
49	Electra: A Repetitively Pulsed, Electron Beam Pumped KrF Laser to Develop the Technologies for Fusion Energy. , 2005, , .		6
50	Time-Integrated Synthetic X-Ray Spectroscopy for Stainless Steel Wire Array Z-Pinches. IEEE Transactions on Plasma Science, 2010, 38, 598-605.	1.3	6
51	Enhancing the x-ray output of a single-wire explosion with a gas-puff based plasma opening switch. Physics of Plasmas, 2018, 25, .	1.9	6
52	Simulations of a Dense Plasma Focus on a High-Impedance Generator. IEEE Transactions on Plasma Science, 2018, 46, 3881-3885.	1.3	6
53	Radiative properties of argon gas puff z-pinch implosions on COBRA. Physics of Plasmas, 2016, 23, .	1.9	5
54	Effective NOx remediation from a surrogate flue gas using the US NRL Electra electron beam facility. Physics of Plasmas, 2017, 24, 023501.	1.9	5

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55	Production of radical species by electron beam deposition in an ArF* lasing medium. Journal of Applied Physics, 2017, 122, .	2.5	5
56	Radiative and atomic properties of C and CH plasmas in the warm-dense-matter regime. Physical Review E, 2018, 98, .	2.1	5
57	Krypton Fluoride (KrF) Laser Driver for Inertial Fusion Energy. Fusion Science and Technology, 2013, 64, 179-186.	1.1	4
58	KrF Laser Development for Fusion Energy. Plasma and Fusion Research, 2013, 8, 3404044-3404044.	0.7	4
59	A non-LTE analysis of high energy density Kr plasmas on Z and NIF. Physics of Plasmas, 2016, 23, 101208.	1.9	4
60	Self-Similar Solutions With Electrothermal Processes for Plasmas of Arbitrary Beta. IEEE Transactions on Plasma Science, 2018, 46, 3766-3777.	1.3	4
61	A multi-term spherical harmonic expansion of the Boltzmann equation for application to low-temperature collisional plasmas. Physics of Plasmas, 2019, 26, 103506.	1.9	4
62	Properties of the Best Ar K-Shell Radiators: Two Decades of Data Analysis from Seven Z-Pinch Drivers. , 2009, , .		3
63	Inner-shell radiation from wire array implosions on the Zebra generator. Physics of Plasmas, 2014, 21, .	1.9	3
64	Effects of a Xe dopant on an Ar gas-puff implosion on Z. Physics of Plasmas, 2016, 23, .	1.9	3
65	Studies of Implosion and Radiative Properties of Tungsten Planar Wire Arrays on Michiganâ€™s Linear Transformer Driver Pulsed-Power Generator. IEEE Transactions on Plasma Science, 2018, 46, 3778-3788.	1.3	3
66	Stable and unstable supersonic stagnation of an axisymmetric rotating magnetized plasma. Journal of Fluid Mechanics, 2022, 936, .	3.4	3
67	Design and Characterization of a UHV Arcjet Nitrogen Source. Materials Research Society Symposia Proceedings, 1997, 482, 393.	0.1	2
68	A Comparison of Radiation Transport Models for a Ti Z Pinch. AIP Conference Proceedings, 2002, , .	0.4	2
69	2D Radiation MHD K-shell Modeling of Single Wire Array Stainless Steel Experiments on the Z Machine. , 2009, , .		2
70	Large diameter copper wire array implosions for K-shell x-ray generation on the refurbished Z machine. , 2009, , .		2
71	High powers from large diameter wire arrays on the refurbished Z generator. , 2009, , .		2
72	Resolving microstructures in Z pinches with intensity interferometry. Physics of Plasmas, 2014, 21, 031210.	1.9	2

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73	Simulations of Recent Argon Gas-Puff Implosions on Z With Xe and Kr Dopants. IEEE Transactions on Plasma Science, 2018, 46, 3871-3880.	1.3	2
74	Electra: a repetitively pulsed KrF laser system. , 0, , .		1
75	The electra KRF laser system. , 2007, , .		1
76	1D Scaling with Ablation for K-Shell Radiation from Stainless Steel Wire Arrays. , 2009, , .		1
77	Improved non-local radiation coupling for Mach2-TCRE. , 2012, , .		1
78	D-on-D and Ar-on-D gas puff Z-pinch simulations on ZR for neutron source. , 2014, , .		1
79	Preface: Radiation from high energy density plasmas. Physics of Plasmas, 2016, 23, 101101.	1.9	1
80	Modeling of an Electron-Beam Pumped ArF Excimer Laser. , 2017, , .		1
81	Recent Simulations of Nozzle Gas Flow and Gas-Puff Z-Pinch Implosions with Magnetic Fields in the Weizmann Z-Pinch. , 2021, , .		1
82	Experimental Investigation of the Inductance of an Imploding Z-Pinch Plasma Column Close to Stagnation. , 2021, , .		1
83	Ultra short pulse laser produced aluminum plasma. AIP Conference Proceedings, 1994, , .	0.4	0
84	Electron-impact excitation calculations of rare gas atoms for spectroscopic analysis of plasma discharges. AIP Conference Proceedings, 2000, , .	0.4	0
85	Electra: An Electron Beam Pumped 730 J Rep-Rate KrF Laser. , 2007, , .		0
86	Development of a Large Area, Durable Electron Emitter for High Average Power KRF Lasers. , 2007, , .		0
87	Electra: An electron beam pumped 730 J rep-rate KrF laser. , 2007, , .		0
88	Computational Analysis of the Magnetic Intervention Concept for First Wall Protection from Energetic Ions in a Direct Drive Laser Fusion Chamber. , 2007, , .		0
89	Wire array z-pinch implosion dynamics and radiation with a 1D ablation model. , 2008, , .		0
90	Radiation Hydrodynamics of Stainless Steel Wire Arrays on the Z Accelerator. , 2009, , .		0

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91	Spatially Resolved Synthetic Spectra from 2D Simulations of Stainless Steel Wire Array Implosions. , 2009, , .		0
92	Non-LTE modeling and simulations for spectroscopic analysis of stainless steel Z-pinch Plasma. , 2009, , .		0
93	Radiation transport for R-Z modeling of Z-pinchs: Validating and optimizing ray tracing methods with Monte Carlo solutions. , 2009, , .		0
94	Two-dimensional radiation MHD modeling of stainless steel and Cu wire array Z-pinch implosions. , 2009, , .		0
95	Thermalization of the ion kinetic energy in a Ne gas puff pinch model. , 2009, , .		0
96	Ablation dynamics and stagnation physics of copper wire array Z-pinch implosions at 20 MA. , 2009, , .		0
97	Stagnation dynamics of a ne gas puff z pinch. , 2010, , .		0
98	Wire array Z-pinch length variations for K-shell x-ray generation on Z. , 2010, , .		0
99	Modeling Cu wire array implosions on the refurbished Z generator. , 2010, , .		0
100	High ion energies in Z pinches: Potential for ${}^3\text{He}$ fusion?. , 2010, , .		0
101	Multidimensional dynamics and structures effects on the radiation and implosion physics of aluminum/magnesium nested wire arrays on the refurbished Z simulator. , 2010, , .		0
102	L-shell spectroscopic diagnostics of imploding wire array plasmas. , 2010, , .		0
103	3-dimensional modeling of large diameter wire array high intensity K-shell radiation sources. , 2010, , .		0
104	Synthetic time and space resolved spectra including Doppler splitting from simulations of stainless steel pinches on refurbished Z. , 2010, , .		0
105	Neutron production in deuterium gas-puff implosions on the refurbished Z accelerator. , 2010, , .		0
106	2D radiation MHD model assessment of initial argon gas distributions to be imploded on the Z machine. , 2011, , .		0
107	Comparison of multi-dimensional MHD simulations against exact solutions for a stagnating Z pinch. , 2011, , .		0
108	Multidimensional radiation MHD modeling of argon on deuterium gas puff Z-pinch loads as a neutron source. , 2011, , .		0

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109	Diagnosing K- and L-shell spectra from wire array implosions on refurbished Z. , 2012, , .		0
110	Thermonuclear burn wave propagation across an ultrahigh magnetic field. , 2012, , .		0
111	An optimization study of multi-material-shell gas puff Z-pinch as a pulsed neutron source on the Sandia Z facility. , 2012, , .		0
112	3 dimensional MHD modeling of the implosion and stagnation of Argon gas puffs. , 2012, , .		0
113	Preface to Special Topic Section: Radiation from High Energy Density Plasmas. Physics of Plasmas, 2014, 21, 031101.	1.9	0
114	Spectroscopic non-LTE modeling of highly charged gold plasma. , 2014, , .		0
115	Synthetic time and space resolved spectra including doppler splitting from simulations of stainless steel and argon pinches on Z. , 2014, , .		0
116	Magnetic flux and heat losses by diffusive, convective, and nernst effects in maglif-like plasma. , 2014, , .		0
117	Simulations of a Dense Plasma Focus on a High Impedance Generator*. , 2017, , .		0
118	X-Ray Spectroscopic Diagnostics of ICF Implosions on NIF Using KR Dopant*. , 2017, , .		0
119	The Effects of Central jet on the Ar-on-D Double-Shell gas Puff Z-Pinch Loads on Sandia Zr for Pulsed Neutron Source. , 2017, , .		0
120	Initial conditions in the hawk dense plasma focus. , 2019, , .		0
121	Self-Similar Solutions with Electro-Thermal Processes for Plasmas of Arbitrary Beta. , 2018, , .		0
122	Initial Results from a Dense Plasma Focus Driven by a High-Inductance Generator. , 2018, , .		0
123	A model for K-shell x-ray yield from magnetic implosions at Sandia's Z machine. , 2021, , .		0
124	Continuum Hard-Photon K-Shell Yields from Z-Pinch Implosions: Present Status and Scaling to Higher Currents. , 2021, , .		0
125	Stable and Unstable Solutions of the Mag Noh Problem*. , 2021, , .		0
126	Simulations of Gas-PUFF Z-Pinch Implosions with Axial and Azimuthal Magnetic Fields in the Weizmann Z-Pinch. , 2018, , .		0



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127	Spectroscopic Diagnostics using Line-Radiation in Laser Driven Non-Equilibrium Plasmas in a Ti-Doped Silica Aerogel Foam Target. , 2018, , .		0
128	Measurements of Early-Time Plasma Evolution in the Hawk Dense Plasma Focus. , 2018, , .		0
129	Effect of Initial Conditions on Charged Particle Acceleration in a Dense Plasma Focus. , 2020, , .		0
130	Simulating a pulsed-power-driven plasma with ideal MHD. Physics of Plasmas, 2022, 29, .	1.9	0
131	Bright-Spot Contributions to Hardphoton Continuum K-Shell Yield from Argon and Stainless-Steel Load Implosions on Z. , 2022, , .		0
132	Scaling of Efficient ar K-Shell Emission From Fast Gas-Puff Z-Pinches in the 10 to 100 Ma Current Range. , 2022, , .		0
133	Time-Dependent Non-LTE Level Kinetics in 1-D MHD Simulations of an Argon Gas Puff Implosion. , 2022, , .		0
134	Progress in the Refining of the K-Shell Yield Scaling Model for Z-Pinch Plasma Radiation Sources. , 2022, , .		0