

David Montgomery

List of Publications by Year in descending order

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135
papers

3,425
citations

117625

34
h-index

175258

52
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141
all docs

141
docs citations

141
times ranked

1682
citing authors

#	ARTICLE	IF	CITATIONS
1	Mechanisms of shape transfer and preheating in indirect-drive double shell collisions. <i>Physics of Plasmas</i> , 2022, 29, .	1.9	7
2	Neural network for 3D inertial confinement fusion shell reconstruction from single radiographs. <i>Review of Scientific Instruments</i> , 2021, 92, 033547.	1.3	5
3	Constraining computational modeling of indirect drive double shell capsule implosions using experiments. <i>Physics of Plasmas</i> , 2021, 28, .	1.9	17
4	Detrimental effects and mitigation of the joint feature in double shell implosion simulations. <i>Physics of Plasmas</i> , 2021, 28, .	1.9	12
5	Evidence for trapping-induced nonlinear frequency shifts in Langmuir waves driven via stimulated Raman scattering. <i>Physics of Plasmas</i> , 2021, 28, 092103.	1.9	2
6	Experimental observation of elevated heating in dynamically compressed CH foam. <i>Plasma Physics and Controlled Fusion</i> , 2020, 62, 074001.	2.1	2
7	Experimental study of energy transfer in double shell implosions. <i>Physics of Plasmas</i> , 2019, 26, .	1.9	32
8	Computational study of instability and fill tube mitigation strategies for double shell implosions. <i>Physics of Plasmas</i> , 2019, 26, .	1.9	12
9	Examining Material Response Using X-Ray Phase Contrast Imaging. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2019, , 89-93.	0.5	2
10	X-Ray Phase Contrast Imaging of Granular Systems. <i>Shock Wave and High Pressure Phenomena</i> , 2019, , 195-230.	0.1	3
11	Measurement of Preheat Due to Nonlocal Electron Transport in Warm Dense Matter. <i>Physical Review Letters</i> , 2018, 120, 025002.	7.8	15
12	Progress Toward Fabrication of Machined Metal Shells for the First Double-Shell Implosions at the National Ignition Facility. <i>Fusion Science and Technology</i> , 2018, 73, 344-353.	1.1	12
13	Design considerations for indirectly driven double shell capsules. <i>Physics of Plasmas</i> , 2018, 25, .	1.9	65
14	Controlling shockwave dynamics using architecture in periodic porous materials. <i>Journal of Applied Physics</i> , 2017, 121, .	2.5	36
15	X-ray Thomson scattering measurement of temperature in warm dense carbon. <i>Plasma Physics and Controlled Fusion</i> , 2017, 59, 014050.	2.1	9
16	A Simple Model of Hohlraum Power Balance and Mitigation of SRS. <i>Journal of Physics: Conference Series</i> , 2016, 688, 012002.	0.4	0
17	Study of shock waves and related phenomena motivated by astrophysics. <i>Journal of Physics: Conference Series</i> , 2016, 688, 012016.	0.4	3
18	Spatially resolved density and ionization measurements of shocked foams using x-ray fluorescence. <i>Journal of Applied Physics</i> , 2016, 120, 125901.	2.5	5

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19	Simulated performance of the optical Thomson scattering diagnostic designed for the National Ignition Facility. Review of Scientific Instruments, 2016, 87, 11E510.	1.3	19
20	Two decades of progress in understanding and control of laser plasma instabilities in indirect drive inertial fusion. Physics of Plasmas, 2016, 23, .	1.9	99
21	Experimental investigation of stimulated Raman and Brillouin scattering instabilities driven by two successive collinear picosecond laser pulses. Physical Review E, 2016, 93, 043209.	2.1	5
22	The design of the optical Thomson scattering diagnostic for the National Ignition Facility. Review of Scientific Instruments, 2016, 87, 11E549.	1.3	6
23	Tracking the density evolution in counter-propagating shock waves using imaging X-ray scattering. Applied Physics Letters, 2016, 109, 031108.	3.3	11
24	Laser irradiance scaling in polar direct drive implosions on the National Ignition Facility. Physics of Plasmas, 2015, 22, .	1.9	11
25	Use of external magnetic fields in hohlraum plasmas to improve laser-coupling. Physics of Plasmas, 2015, 22, .	1.9	45
26	Combined x-ray scattering, radiography, and velocity interferometry/streaked optical pyrometry measurements of warm dense carbon using a novel technique of shock-and-release. Physics of Plasmas, 2014, 21, .	1.9	13
27	Temperature measurements of shocked silica aerogel foam. Physical Review E, 2014, 90, 033107.	2.1	23
28	Stimulated scattering in laser driven fusion and high energy density physics experiments. Physics of Plasmas, 2014, 21, .	1.9	21
29	Demonstration of x-ray fluorescence imaging of a high-energy-density plasma. Review of Scientific Instruments, 2014, 85, 11E602.	1.3	6
30	Equation of State Measurements of Warm Dense Carbon Using Laser-Driven Shock and Release Technique. Physical Review Letters, 2014, 112, 155003.	7.8	38
31	Simultaneous measurements of several state variables in shocked carbon by imaging x-ray scattering. Physics of Plasmas, 2014, 21, 042701.	1.9	7
32	In <i>in situ</i> investigation of the dynamic response of energetic materials using IMPULSE at the Advanced Photon Source. Journal of Physics: Conference Series, 2014, 500, 142028.	0.4	27
33	Self-organized coherent bursts of stimulated Raman scattering and speckle interaction in multi-speckled laser beams. Physics of Plasmas, 2013, 20, 012702.	1.9	42
34	Development of a polar direct-drive platform for studying inertial confinement fusion implosion mix on the National Ignition Facility. Physics of Plasmas, 2013, 20, .	1.9	21
35	Trapping induced nonlinear behavior of backward stimulated Raman scattering in multi-speckled laser beams. Physics of Plasmas, 2012, 19, .	1.9	50
36	Generation of magnetized collisionless shocks by a novel, laser-driven magnetic piston. Physics of Plasmas, 2012, 19, .	1.9	34

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37	Thomson Scattering Measurements of Temperature and Density in a Low-Density, Laser-Driven Magnetized Plasma. <i>Journal of Instrumentation</i> , 2012, 7, P02002-P02002.	1.2	8
38	Imaging x-ray Thomson scattering spectrometer design and demonstration (invited). <i>Review of Scientific Instruments</i> , 2012, 83, 10E108.	1.3	28
39	High-speed synchrotron X-ray phase contrast imaging for analysis of low-Z composite microstructure. <i>Composites Part A: Applied Science and Manufacturing</i> , 2012, 43, 885-892.	7.6	31
40	Collisionless Shocks in a Large Magnetized Laser-Plasma Plume. <i>IEEE Transactions on Plasma Science</i> , 2011, 39, 2406-2407.	1.3	9
41	Imaging X-ray crystal spectrometer for laser-produced plasmas. <i>Journal of Instrumentation</i> , 2011, 6, P04004-P04004.	1.2	30
42	Carbon ion beam focusing using laser irradiated, heated diamond hemispherical shells. <i>Journal of Physics: Conference Series</i> , 2010, 244, 022053.	0.4	6
43	Measuring electron heat conduction in non-uniform laser-produced plasmas using imaging Thomson scattering. <i>Journal of Instrumentation</i> , 2010, 5, P11005-P11005.	1.2	7
44	Advanced Laser Particle Accelerator Development at LANL: From Fast Ignition to Radiation Oncology. , 2010, , .		2
45	Phase-contrast imaging using ultrafast x-rays in laser-shocked materials. <i>Review of Scientific Instruments</i> , 2010, 81, 10E520.	1.3	22
46	Investigations into the seeding of instabilities due to x-ray preheat in beryllium-based inertial confinement fusion targets. <i>Physics of Plasmas</i> , 2010, 17, 056308.	1.9	6
47	Onset and saturation of backward stimulated Raman scattering of laser in trapping regime in three spatial dimensions. <i>Physics of Plasmas</i> , 2009, 16, 113101.	1.9	50
48	Investigation of stimulated Raman scattering using a short-pulse diffraction limited laser beam near the instability threshold. <i>Laser and Particle Beams</i> , 2009, 27, 185-190.	1.0	31
49	INERTIAL CONFINEMENT FUSION RESEARCH AT LOS ALAMOS NATIONAL LABORATORY. , 2009, , .		0
50	The Dynamics of Thermal Expansion in Single Crystal Beryllium from Nanosecond X-Ray Irradiation. <i>Fusion Science and Technology</i> , 2009, 55, 152-162.	1.1	2
51	Plasma jet acceleration of dust particles to hypervelocities. <i>Physics of Plasmas</i> , 2008, 15, .	1.9	24
52	TRIDENT high-energy-density facility experimental capabilities and diagnostics. <i>Review of Scientific Instruments</i> , 2008, 79, 10F305.	1.3	41
53	Experimental Demonstration of Plasma-Drag Acceleration of a Dust Cloud to Hypervelocities. <i>Physical Review Letters</i> , 2008, 100, 155002.	7.8	28
54	Using a short-pulse diffraction-limited laser beam to probe filamentation of a random phase plate smoothed beam. <i>Review of Scientific Instruments</i> , 2008, 79, 10F551.	1.3	3

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55	Mitigation of stimulated Raman scattering in hohlraum plasmas. Journal of Physics: Conference Series, 2008, 112, 022030.	0.4	6
56	Kinetic simulations of stimulated Raman and Brillouin scattering of trident short-pulse laser in a single-hot-spot. Journal of Physics: Conference Series, 2008, 112, 022033.	0.4	2
57	Investigation of laser plasma instabilities using picosecond laser pulses. Journal of Physics: Conference Series, 2008, 112, 022042.	0.4	10
58	Short pulse laser train for laser plasma interaction experiments. Review of Scientific Instruments, 2007, 78, 083501.	1.3	4
59	Cryogenic DT and D2 targets for inertial confinement fusion. Physics of Plasmas, 2007, 14, 058101.	1.9	55
60	The first target experiments on the National Ignition Facility. European Physical Journal D, 2007, 44, 273-281.	1.3	11
61	Nonlinear backward stimulated Raman scattering from electron beam acoustic modes in the kinetic regime. Physics of Plasmas, 2006, 13, 072701.	1.9	42
62	Grazing incidence imaging spectrometer for use in inertial confinement fusion and radiation hydrodynamic experiments. Review of Scientific Instruments, 2006, 77, 10F320.	1.3	0
63	Particle-in-cell studies of laser-driven hot spots and a statistical model for mesoscopic properties of Raman backscatter. European Physical Journal Special Topics, 2006, 133, 253-257.	0.2	11
64	Effects of ion composition on backward stimulated Raman and Brillouin scattering in a laser-driven hot spot. European Physical Journal Special Topics, 2006, 133, 335-337.	0.2	3
65	Characterization of D-T cryogenic layer formation in a Beryllium capsule using X-ray phase contrast imaging. European Physical Journal Special Topics, 2006, 133, 869-873.	0.2	5
66	Gas-filled hohlraum experiments at the National Ignition Facility. Physics of Plasmas, 2006, 13, 056319.	1.9	13
67	Different $k \gg D$ regimes for nonlinear effects on Langmuir waves. Physics of Plasmas, 2006, 13, 055906.	1.9	61
68	Status of cryogenic layering for NIF ignition targets. European Physical Journal Special Topics, 2006, 133, 863-867.	0.2	9
69	Measurements of gas filled hohlraum energetics at the national ignition facility using a single quad. European Physical Journal Special Topics, 2006, 133, 919-923.	0.2	3
70	X-ray imaging of cryogenic deuterium-tritium layers in a beryllium shell. Journal of Applied Physics, 2005, 98, 103105.	2.5	37
71	Characterization using Phase-Contrast Enhanced X-Ray Imaging. IEEE International Conference on Plasma Science, 2005, , .	0.0	0
72	Observation of a Transition from Fluid to Kinetic Nonlinearities for Langmuir Waves Driven by Stimulated Raman Backscatter. Physical Review Letters, 2005, 94, 175003.	7.8	94

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73	Characterization of National Ignition Facility cryogenic beryllium capsules using x-ray phase contrast imaging. <i>Review of Scientific Instruments</i> , 2004, 75, 3986-3988.	1.3	62
74	Observation of the Parametric Two-Ion Decay Instability with Thomson Scattering. <i>Physical Review Letters</i> , 2004, 93, 045004.	7.8	45
75	Progress in long scale length laser-plasma interactions. <i>Nuclear Fusion</i> , 2004, 44, S185-S190.	3.5	29
76	Calibration of initial measurements from the full aperture backscatter system on the National Ignition Facility. <i>Review of Scientific Instruments</i> , 2004, 75, 4174-4176.	1.3	11
77	Detailed characterization of plasma wave behavior using collective Thomson scattering (invited). <i>Review of Scientific Instruments</i> , 2004, 75, 3793-3799.	1.3	10
78	Stimulated Brillouin scattering in the saturated regime. <i>Physics of Plasmas</i> , 2003, 10, 1846-1853.	1.9	29
79	Modelling of collective Thomson scattering from collisional plasmas. <i>Journal of Physics A</i> , 2003, 36, 5981-5989.	1.6	11
80	Recent Trident single hot spot experiments: Evidence for kinetic effects, and observation of Langmuir decay instability cascade. <i>Physics of Plasmas</i> , 2002, 9, 2311-2320.	1.9	126
81	Cyclic plasma shearing interferometry for temporal characterization of a laser-produced plasma. <i>Review of Scientific Instruments</i> , 2002, 73, 3813-3817.	1.3	2
82	Observation of ion heating by stimulated-Brillouin-scattering-driven ion-acoustic waves using Thomson scattering. <i>Physics of Plasmas</i> , 2002, 9, 4709-4718.	1.9	18
83	Design considerations for fiber-coupled streaked optical spectroscopy. <i>Review of Scientific Instruments</i> , 2001, 72, 979-982.	1.3	15
84	Comment on "First Observation of Ion Acoustic Waves Produced by the Langmuir Decay Instability". <i>Physical Review Letters</i> , 2001, 86, 3686-3686.	7.8	11
85	Observation of Stimulated Electron-Acoustic-Wave Scattering. <i>Physical Review Letters</i> , 2001, 87, 155001.	7.8	149
86	The spatial location of laser-driven, forward-propagating waves in a National-Ignition-Facility-relevant plasma. <i>Physics of Plasmas</i> , 2000, 7, 323-332.	1.9	10
87	Flow-Induced Beam Steering in a Single Laser Hot Spot. <i>Physical Review Letters</i> , 2000, 84, 678-681.	7.8	33
88	Experimental study of laser beam transmission and power accounting in a large scale length laser plasma. <i>Physics of Plasmas</i> , 2000, 7, 3388-3398.	1.9	9
89	Observed insensitivity of stimulated Raman scattering on electron density. <i>Physics of Plasmas</i> , 2000, 7, 3743-3750.	1.9	51
90	Experimental investigation of short scalelength density fluctuations in laser-produced plasmas. <i>Physics of Plasmas</i> , 2000, 7, 2114-2125.	1.9	12

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91	Observation of the Nonlinear Saturation of Langmuir Waves Driven by Ponderomotive Force in a Large Scale Plasma. <i>Physical Review Letters</i> , 1999, 83, 2965-2968.	7.8	23
92	Evidence of plasma fluctuations and their effect on the growth of stimulated Brillouin and stimulated Raman scattering in laser plasmas. <i>Physics of Plasmas</i> , 1998, 5, 1973-1980.	1.9	65
93	Increased Saturated Levels of Stimulated Brillouin Scattering of a Laser by Seeding a Plasma with an External Light Source. <i>Physical Review Letters</i> , 1998, 81, 2252-2255.	7.8	20
94	Electron temperature and density measurements in laser-produced large-scale-length gas-bag plasmas by x-ray spectroscopy. <i>Physical Review E</i> , 1997, 55, 927-938.	2.1	30
95	Measurements of laser-plasma instability relevant to ignition hohlraums. <i>Physics of Plasmas</i> , 1997, 4, 1849-1856.	1.9	35
96	Measurements of high intensity laser beam transmission through a large scalelength plasma. <i>Review of Scientific Instruments</i> , 1997, 68, 1725-1729.	1.3	13
97	Observation of multiple mechanisms for stimulating ion waves in ignition scale plasmas. <i>Physics of Plasmas</i> , 1997, 4, 1800-1810.	1.9	37
98	Imaging backscattered and near to backscattered light in ignition scale plasmas (invited). <i>Review of Scientific Instruments</i> , 1997, 68, 636-640.	1.3	27
99	Effects of laser beam smoothing on stimulated Raman scattering in exploding foil plasmas. <i>Physics of Plasmas</i> , 1996, 3, 1728-1736.	1.9	47
100	Laser-plasma interactions in ignition-scale hohlraum plasmas. <i>Physics of Plasmas</i> , 1996, 3, 2029-2040.	1.9	148
101	Observation of Energy Transfer between Frequency-Mismatched Laser Beams in a Large-Scale Plasma. <i>Physical Review Letters</i> , 1996, 76, 2065-2068.	7.8	101
102	Observed Dependence of Stimulated Raman Scattering on Ion-Acoustic Damping in Hohlraum Plasmas. <i>Physical Review Letters</i> , 1996, 77, 2702-2705.	7.8	71
103	Measurements of Electron Temperature by Spectroscopy in Hohlraum Targets. <i>Physical Review Letters</i> , 1996, 77, 4350-4353.	7.8	35
104	First Optical Observation of Intensity Dependent Laser Beam Deflection in a Flowing Plasma. <i>Physical Review Letters</i> , 1996, 77, 1294-1297.	7.8	46
105	Effect of Ion-Wave Damping on Stimulated Raman Scattering in High-Z Laser-Produced Plasmas. <i>Physical Review Letters</i> , 1996, 77, 2706-2709.	7.8	70
106	Dependence of stimulated Brillouin scattering on laser intensity, laser frequency, and ion species in hohlraum plasmas. <i>Physical Review E</i> , 1996, 53, 2747-2750.	2.1	26
107	Beam smoothing effects on the stimulated Brillouin scattering (SBS) instability in Nova exploding foil plasmas. <i>Physics of Plasmas</i> , 1995, 2, 4285-4296.	1.9	19
108	Characterization of titanium laser-produced plasmas. <i>Physics of Plasmas</i> , 1995, 2, 3792-3803.	1.9	6

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109	Low Stimulated Brillouin Backscatter Observed from Large, Hot Plasmas in Gas-Filled Hohlräume. Physical Review Letters, 1995, 74, 2957-2960.	7.8	34
110	Multiangle, Time-Resolved Spectroscopy of Laser-Light Scattering in Underdense, Inhomogeneous Laser Plasmas. Physical Review Letters, 1995, 74, 3157-3160.	7.8	7
111	Simultaneous temporal, spectral, and spatial resolution of laser scatter from parametric plasma instabilities. Review of Scientific Instruments, 1995, 66, 4204-4207.	1.3	4
112	Nonlinear Theory and Simulations of Stimulated Brillouin Backscatter in Multispecies Plasmas. Physical Review Letters, 1995, 74, 5048-5051.	7.8	25
113	Production and characterization of large plasmas from gas bag targets on Nova. Physics of Plasmas, 1995, 2, 3161-3168.	1.9	29
114	Gas-filled targets for large scale-length plasma interaction experiments on Nova. Physics of Plasmas, 1995, 2, 2473-2479.	1.9	35
115	X-ray imaging of uniform large scale-length plasmas created from gas-filled targets on Nova. Review of Scientific Instruments, 1995, 66, 782-784.	1.3	7
116	Measurements of Radial Heat Wave Propagation in Laser-Produced Exploding-Foil Plasmas. Physical Review Letters, 1994, 73, 2055-2058.	7.8	36
117	High Temperatures in Inertial Confinement Fusion Radiation Cavities Heated with 0.35 μ m Light. Physical Review Letters, 1994, 73, 2320-2323.	7.8	156
118	Intensity scaling and saturation of stimulated Raman forward scattering. Physics of Plasmas, 1994, 1, 1985-1996.	1.9	3
119	X-ray flux from a burnthrough Au foil. Journal of Quantitative Spectroscopy and Radiative Transfer, 1994, 51, 19-25.	2.3	20
120	Beam smoothing effects on stimulated Raman and Brillouin backscattering in laser-produced plasmas. Journal of Fusion Energy, 1993, 12, 323-330.	1.2	4
121	Observation of near-forward stimulated Brillouin scattering from a laser-produced plasma. Physical Review Letters, 1993, 70, 802-805.	7.8	14
122	Near-forward scattering of laser light*. Physics of Fluids B, 1993, 5, 2596-2602.	1.7	6
123	Parametric instabilities in large nonuniform laser plasmas. Plasma Physics and Controlled Fusion, 1992, 34, 2077-2081.	2.1	10
124	Nonlinear laser-matter interaction processes in long-scale-length plasmas. Physics of Fluids B, 1992, 4, 2232-2240.	1.7	47
125	Characterization of an x-ray-flux source for the production of high-energy-density plasmas. Physical Review A, 1992, 46, 7853-7868.	2.5	45
126	Evaluating the accuracy of optical-streak-camera sweep rates using uncertain data. Review of Scientific Instruments, 1992, 63, 4322-4326.	1.3	9

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127	Production of very large, subcritical plasmas for laser fusion research. Physics of Fluids B, 1991, 3, 2898-2905.	1.7	12
128	Experimental studies of stimulated Raman scattering in reactor-size, laser-produced plasmas. Physics of Fluids B, 1991, 3, 1473-1478.	1.7	16
129	Intensity scaling of stimulated Raman forward scattering in laser-produced plasmas. Physical Review Letters, 1991, 66, 2324-2327.	7.8	25
130	Stability And Accuracy Of The Sweep Rate Measurements For LLNL Optical Streak Cameras. , 1990, , .		1
131	An experimental investigation of refraction-induced distortions in harmonic light images of laser-produced plasmas. Journal of Applied Physics, 1990, 67, 3630-3634.	2.5	4
132	A Comparison Of Flat-Field Measurement Techniques For Optical Streak Cameras'. Proceedings of SPIE, 1989, , .	0.8	1
133	Flat-Field Response And Geometric Distortion Measurements Of Optical Streak Cameras. Proceedings of SPIE, 1988, 0832, 283.	0.8	8
134	Software systems for processing and analysis at the NOVA high-energy laser facility. Review of Scientific Instruments, 1986, 57, 1878-1879.	1.3	0
135	Summary of control and data acquisition systems for NOVA experiments (invited). Review of Scientific Instruments, 1986, 57, 1868-1871.	1.3	1