

Igor Igumenshchev

List of Publications by Year in descending order

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71
papers

2,309
citations

172457

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1117
citing authors

#	ARTICLE	IF	CITATIONS
1	Measuring magnetic flux suppression in high-power laser-plasma interactions. <i>Physics of Plasmas</i> , 2022, 29, .	1.9	14
2	Analysis of limited coverage effects on areal density measurements in inertial confinement fusion implosions. <i>Physics of Plasmas</i> , 2022, 29, .	1.9	1
3	Bound on hot-spot mix in high-velocity, high-adiabat direct-drive cryogenic implosions based on comparison of absolute x-ray and neutron yields. <i>Physical Review E</i> , 2022, 106, .	2.1	2
4	Observations of anomalous x-ray emission at early stages of hot-spot formation in deuterium-tritium cryogenic implosions. <i>Physical Review E</i> , 2021, 103, 023201.	2.1	4
5	Mitigation of mode-one asymmetry in laser-direct-drive inertial confinement fusion implosions. <i>Physics of Plasmas</i> , 2021, 28, .	1.9	26
6	Experimentally Inferred Fusion Yield Dependencies of OMEGA Inertial Confinement Fusion Implosions. <i>Physical Review Letters</i> , 2021, 127, 105001.	7.8	23
7	Inverse ray tracing on icosahedral tetrahedron grids for non-linear laser plasma interaction coupled to 3D radiation hydrodynamics. <i>Journal of Computational Physics</i> , 2021, 443, 110537.	3.8	11
8	Central Density and Low-Mode Perturbation Control of Inertial Confinement Fusion Dynamic-Shell Targets. <i>Frontiers in Physics</i> , 2021, 9, .	2.1	3
9	Using statistical modeling to predict and understand fusion experiments. <i>Physics of Plasmas</i> , 2021, 28, .	1.9	4
10	Post-processing of face-on radiographic images for quantitative analysis in ablative Rayleigh-Taylor instability experiments. <i>High Energy Density Physics</i> , 2020, 37, 100851.	1.5	2
11	Novel Hot-Spot Ignition Designs for Inertial Confinement Fusion with Liquid-Deuterium-Tritium Spheres. <i>Physical Review Letters</i> , 2020, 125, 065001.	7.8	9
12	Impact of stalk on directly driven inertial confinement fusion implosions. <i>Physics of Plasmas</i> , 2020, 27, 032704.	1.9	15
13	Rarefaction Flows and Mitigation of Imprint in Direct-Drive Implosions. <i>Physical Review Letters</i> , 2019, 123, 065001.	7.8	10
14	Adaptive inverse ray-tracing for accurate and efficient modeling of cross beam energy transfer in hydrodynamics simulations. <i>Physics of Plasmas</i> , 2019, 26, 072706.	1.9	16
15	Long-duration direct drive hydrodynamics experiments on the National Ignition Facility: Platform development and numerical modeling with CHIC. <i>Physics of Plasmas</i> , 2019, 26, 082703.	1.9	4
16	Tripled yield in direct-drive laser fusion through statistical modelling. <i>Nature</i> , 2019, 565, 581-586.	27.8	103
17	Impact of imposed mode 2 laser drive asymmetry on inertial confinement fusion implosions. <i>Physics of Plasmas</i> , 2019, 26, .	1.9	15
18	Real and complex valued geometrical optics inverse ray-tracing for inline field calculations. <i>Physics of Plasmas</i> , 2019, 26, 032301.	1.9	18

#	ARTICLE	IF	CITATIONS
19	From ICF to laboratory astrophysics: ablative and classical Rayleigh-Taylor instability experiments in turbulent-like regimes. Nuclear Fusion, 2019, 59, 032002.	3.5	25
20	Subpercent-Scale Control of 3D Low Modes of Targets Imploded in Direct-Drive Configuration on OMEGA. Physical Review Letters, 2018, 120, 125001.	7.8	11
21	Impact of asymmetries on fuel performance in inertial confinement fusion. Physical Review E, 2018, 98, .	2.1	16
22	Analysis of trends in experimental observables: Reconstruction of the implosion dynamics and implications for fusion yield extrapolation for direct-drive cryogenic targets on OMEGA. Physics of Plasmas, 2018, 25, .	1.9	18
23	Effects of residual kinetic energy on yield degradation and ion temperature asymmetries in inertial confinement fusion implosions. Physics of Plasmas, 2018, 25, .	1.9	33
24	Three-dimensional hydrodynamic simulations of OMEGA implosions. Physics of Plasmas, 2017, 24, .	1.9	26
25	A wave-based model for cross-beam energy transfer in direct-drive inertial confinement fusion. Physics of Plasmas, 2017, 24, .	1.9	40
26	Monochromatic backlighting of direct-drive cryogenic DT implosions on OMEGA. Physics of Plasmas, 2017, 24, .	1.9	21
27	Measurement of ablative Richtmyer-Meshkov evolution from laser imprint. Physics of Plasmas, 2017, 24, 102702.	1.9	4
28	Mitigation of cross-beam energy transfer in symmetric implosions on OMEGA using wavelength detuning. Physics of Plasmas, 2017, 24, 062706.	1.9	30
29	Full-wave and ray-based modeling of cross-beam energy transfer between laser beams with distributed phase plates and polarization smoothing. Physics of Plasmas, 2017, 24, .	1.9	20
30	Systematic Fuel Cavity Asymmetries in Directly Driven Inertial Confinement Fusion Implosions. Physical Review Letters, 2017, 118, 135001.	7.8	22
31	National direct-drive program on OMEGA and the National Ignition Facility. Plasma Physics and Controlled Fusion, 2017, 59, 014008.	2.1	50
32	Isolating and quantifying cross-beam energy transfer in direct-drive implosions on OMEGA and the National Ignition Facility. Physics of Plasmas, 2016, 23, .	1.9	19
33	Demonstration of Fuel Hot-Spot Pressure in Excess of 50 Gbar for Direct-Drive, Layered Deuterium-Tritium Implosions on OMEGA. Physical Review Letters, 2016, 117, 025001.	7.8	72
34	Three-dimensional modeling of direct-drive cryogenic implosions on OMEGA. Physics of Plasmas, 2016, 23, .	1.9	69
35	Precision Mapping of Laser-Driven Magnetic Fields and Their Evolution in High-Energy-Density Plasmas. Physical Review Letters, 2015, 114, 215003.	7.8	54
36	Measurements of the Conduction-Zone Length and Mass Ablation Rate in Cryogenic Direct-Drive Implosions on OMEGA. Physical Review Letters, 2015, 114, 155002.	7.8	12

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37	Mass-ablation-rate measurements in direct-drive cryogenic implosions using x-ray self-emission images. Review of Scientific Instruments, 2014, 85, 11D616.	1.3	2
38	Progress in indirect and direct-drive planar experiments on hydrodynamic instabilities at the ablation front. Physics of Plasmas, 2014, 21, 122702.	1.9	18
39	Self-generated magnetic fields in direct-drive implosion experiments. Physics of Plasmas, 2014, 21, .	1.9	35
40	Nonuniformly Driven Two-Plasmon-Decay Instability in Direct-Drive Implosions. Physical Review Letters, 2014, 112, 145001.	7.8	29
41	Improving the hot-spot pressure and demonstrating ignition hydrodynamic equivalence in cryogenic deuterium-tritium implosions on OMEGA. Physics of Plasmas, 2014, 21, .	1.9	139
42	Demonstration of the Improved Rocket Efficiency in Direct-Drive Implosions Using Different Ablator Materials. Physical Review Letters, 2013, 111, 245005.	7.8	33
43	Laser-Beam Zooming to Mitigate Crossed-Beam Energy Losses in Direct-Drive Implosions. Physical Review Letters, 2013, 110, 145001.	7.8	31
44	Improving cryogenic deuterium-tritium implosion performance on OMEGA. Physics of Plasmas, 2013, 20, .	1.9	48
45	Measured hot-electron intensity thresholds quantified by a two-plasmon-decay resonant common-wave gain in various experimental configurations. Physics of Plasmas, 2013, 20, .	1.9	47
46	Observation of Self-Similarity in the Magnetic Fields Generated by the Ablative Nonlinear Rayleigh-Taylor Instability. Physical Review Letters, 2013, 110, 185003.	7.8	30
47	Shell trajectory measurements from direct-drive implosion experiments. Review of Scientific Instruments, 2012, 83, 10E530.	1.3	36
48	Crossed-beam energy transfer in direct-drive implosions. Physics of Plasmas, 2012, 19, .	1.9	133
49	Laser-plasma interactions in direct-drive ignition plasmas. Plasma Physics and Controlled Fusion, 2012, 54, 124016.	2.1	31
50	Magnetic Field Generation by the Rayleigh-Taylor Instability in Laser-Driven Planar Plastic Targets. Physical Review Letters, 2012, 109, 115001.	7.8	42
51	Increasing Hydrodynamic Efficiency by Reducing Cross-Beam Energy Transfer in Direct-Drive-Implosion Experiments. Physical Review Letters, 2012, 108, 125003.	7.8	67
52	Total energy loss to fast ablator-ions and target capacitance of direct-drive implosions on OMEGA. Applied Physics Letters, 2012, 101, 114102.	3.3	10
53	Designs for highly nonlinear ablative Rayleigh-Taylor experiments on the National Ignition Facility. Physics of Plasmas, 2012, 19, .	1.9	33
54	Inertial Confinement Fusion Using the OMEGA Laser System. IEEE Transactions on Plasma Science, 2011, 39, 1007-1014.	1.3	11

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55	Crossed-beam energy transfer in implosion experiments on OMEGA. <i>Physics of Plasmas</i> , 2010, 17, .	1.9	142
56	Demonstration of the Highest Deuterium-Tritium Areal Density Using Multiple-Picket Cryogenic Designs on OMEGA. <i>Physical Review Letters</i> , 2010, 104, 165001.	7.8	111
57	The effects of target mounts in direct-drive implosions on OMEGA. <i>Physics of Plasmas</i> , 2009, 16, .	1.9	45
58	Neutron yield study of direct-drive, low-adiabat cryogenic D2 implosions on OMEGA laser system. <i>Physics of Plasmas</i> , 2009, 16, 112706.	1.9	27
59	Studies of Plastic-Ablator Compressibility for Direct-Drive Inertial Confinement Fusion on Omega. <i>Physical Review Letters</i> , 2008, 100, 185003.	7.8	28
60	Performance of direct-drive cryogenic targets on OMEGA. <i>Physics of Plasmas</i> , 2008, 15, .	1.9	92
61	Diagnosing direct-drive, shock-heated, and compressed plastic planar foils with noncollective spectrally resolved x-ray scattering. <i>Physics of Plasmas</i> , 2007, 14, 122703.	1.9	37
62	Double-Pulse Laser-Driven Jets on OMEGA. <i>Astrophysics and Space Science</i> , 2007, 307, 47-50.	1.4	7
63	Unipolar outflows and global meridional circulations in rotating accretion flows. <i>Monthly Notices of the Royal Astronomical Society</i> , 2000, 314, 54-58.	4.4	7
64	On the absence of winds in advection-dominated accretion flows. <i>Monthly Notices of the Royal Astronomical Society</i> , 2000, 314, 775-781.	4.4	51
65	A note on the conditions for SSD-ADAF transitions. <i>Monthly Notices of the Royal Astronomical Society</i> , 1998, 293, 443-446.	4.4	21
66	Statistical theory of thermal instability. <i>Monthly Notices of the Royal Astronomical Society</i> , 1998, 298, 909-919.	4.4	1
67	Slim accretion discs: a model for ADAF-SLE transitions. <i>Monthly Notices of the Royal Astronomical Society</i> , 1998, 298, 1069-1078.	4.4	12
68	Numerical simulation of thick disc accretion on to a rotating black hole. <i>Monthly Notices of the Royal Astronomical Society</i> , 1997, 284, 767-772.	4.4	37
69	On the morphology of accretion flows with small, non-zero specific angular momentum. <i>Monthly Notices of the Royal Astronomical Society</i> , 1997, 285, 439-448.	4.4	15
70	Accretion discs around black holes: two-dimensional, advection-cooled flows. <i>Monthly Notices of the Royal Astronomical Society</i> , 1996, 278, 236-250.	4.4	73
71	The outflowing regime of quasi-spherical accretion on to X-ray compact objects. <i>Monthly Notices of the Royal Astronomical Society</i> , 1993, 260, 727-764.	4.4	6