D S Clark

List of Publications by Year in descending order

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116 papers	6,670 citations	41344 49 h-index	64796 79 g-index
117 all docs	117 docs citations	117 times ranked	1484 citing authors

#	Article	IF	Citations
1	Point design targets, specifications, and requirements for the 2010 ignition campaign on the National Ignition Facility. Physics of Plasmas, 2011, 18, .	1.9	534
2	Progress towards ignition on the National Ignition Facility. Physics of Plasmas, 2013, 20, .	1.9	259
3	Burning plasma achieved in inertial fusion. Nature, 2022, 601, 542-548.	27.8	233
4	Onset of Hydrodynamic Mix in High-Velocity, Highly Compressed Inertial Confinement Fusion Implosions. Physical Review Letters, 2013, 111, 085004.	7.8	215
5	Three-dimensional simulations of low foot and high foot implosion experiments on the National Ignition Facility. Physics of Plasmas, 2016, 23, .	1.9	162
6	Turbulent mixing and transition criteria of flows induced by hydrodynamic instabilities. Physics of Plasmas, 2019, 26, .	1.9	154
7	The experimental plan for cryogenic layered target implosions on the National Ignition Facilityâ€”The inertial confinement approach to fusion. Physics of Plasmas, 2011, 18, .	1.9	148
8	Metrics for long wavelength asymmetries in inertial confinement fusion implosions on the National Ignition Facility. Physics of Plasmas, 2014, 21, .	1.9	140
9	Capsule implosion optimization during the indirect-drive National Ignition Campaign. Physics of Plasmas, 2011, 18, .	1.9	131
10	Detailed implosion modeling of deuterium-tritium layered experiments on the National Ignition Facility. Physics of Plasmas, 2013, 20, 056318.	1.9	128
11	Implosion dynamics measurements at the National Ignition Facility. Physics of Plasmas, 2012, 19, .	1.9	125
12	Radiation hydrodynamics modeling of the highest compression inertial confinement fusion ignition experiment from the National Ignition Campaign. Physics of Plasmas, 2015, 22, .	1.9	120
13	First High-Convergence Cryogenic Implosion in a Near-Vacuum Hohlraum. Physical Review Letters, 2015, 114, 175001.	7.8	117
14	Shock timing experiments on the National Ignition Facility: Initial results and comparison with simulation. Physics of Plasmas, 2012, 19, .	1.9	115
15	A high-resolution integrated model of the National Ignition Campaign cryogenic layered experiments. Physics of Plasmas, 2012, 19, .	1.9	108
16	An in-flight radiography platform to measure hydrodynamic instability growth in inertial confinement fusion capsules at the National Ignition Facility. Physics of Plasmas, 2014, 21, .	1.9	98
17	Inhibition of turbulence in inertial-confinement-fusion hot spots by viscous dissipation. Physical Review E, 2014, 89, 053106.	2.1	97
18	Cryogenic thermonuclear fuel implosions on the National Ignition Facility. Physics of Plasmas, 2012, 19, .	1.9	95

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19	Diagnosing and controlling mix in National Ignition Facility implosion experiments. Physics of Plasmas, 2011, 18, .	1.9	92
20	First Measurements of Hydrodynamic Instability Growth in Indirectly Driven Implosions at Ignition-Relevant Conditions on the National Ignition Facility. Physical Review Letters, 2014, 112, 185003.	7.8	90
21	Plastic ablator ignition capsule design for the National Ignition Facility. Physics of Plasmas, 2010, 17, .	1.9	89
22	Short-wavelength and three-dimensional instability evolution in National Ignition Facility ignition capsule designs. Physics of Plasmas, 2011, 18, .	1.9	87
23	Design of inertial fusion implosions reaching the burning plasma regime. Nature Physics, 2022, 18, 251-258.	16.7	87
24	High-Performance Indirect-Drive Cryogenic Implosions at High Adiabat on the National Ignition Facility. Physical Review Letters, 2018, 121, 135001.	7.8	86
25	Precision Shock Tuning on the National Ignition Facility. Physical Review Letters, 2012, 108, 215004.	7.8	83
26	Performance metrics for inertial confinement fusion implosions: Aspects of the technical framework for measuring progress in the National Ignition Campaign. Physics of Plasmas, 2012, 19, .	1.9	78
27	Reduced instability growth with high-adiabat high-foot implosions at the National Ignition Facility. Physical Review E, 2014, 90, 011102.	2.1	77
28	Rayleighâ€“Taylor instabilities in high-energy density settings on the National Ignition Facility. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 18233-18238.	7.1	76
29	Record Energetics for an Inertial Fusion Implosion at NIF. Physical Review Letters, 2021, 126, 025001.	7.8	76
30	Robustness studies of ignition targets for the National Ignition Facility in two dimensions. Physics of Plasmas, 2008, 15, .	1.9	71
31	Three-dimensional modeling and hydrodynamic scaling of National Ignition Facility implosions. Physics of Plasmas, 2019, 26, .	1.9	70
32	Nuclear imaging of the fuel assembly in ignition experiments. Physics of Plasmas, 2013, 20, 056320.	1.9	65
33	Indirect drive ignition at the National Ignition Facility. Plasma Physics and Controlled Fusion, 2017, 59, 014021.	2.1	64
34	Numerical Modeling of the Sensitivity of X-Ray Driven Implosions to Low-Mode Flux Asymmetries. Physical Review Letters, 2013, 110, 075001.	7.8	63
35	Cryogenic tritium-hydrogen-deuterium and deuterium-tritium layer implosions with high density carbon ablators in near-vacuum hohlraums. Physics of Plasmas, 2015, 22, 062703.	1.9	62
36	Capsule physics comparison of National Ignition Facility implosion designs using plastic, high density carbon, and beryllium ablators. Physics of Plasmas, 2018, 25, .	1.9	62

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37	Hydrodynamic instability growth and mix experiments at the National Ignition Facility. Physics of Plasmas, 2014, 21, .	1.9	60
38	Measurements of an Ablator-Gas Atomic Mix in Indirectly Driven Implosions at the National Ignition Facility. Physical Review Letters, 2014, 112, 025002.	7.8	60
39	Integrated modeling of cryogenic layered highfoot experiments at the NIF. Physics of Plasmas, 2016, 23, .	1.9	59
40	Improved Performance of High Areal Density Indirect Drive Implosions at the National Ignition Facility using a Four-Shock Adiabat Shaped Drive. Physical Review Letters, 2015, 115, 105001.	7.8	58
41	Impact of Localized Radiative Loss on Inertial Confinement Fusion Implosions. Physical Review Letters, 2020, 124, 145001.	7.8	58
42	Assembly of High-Areal-Density Deuterium-Tritium Fuel from Indirectly Driven Cryogenic Implosions. Physical Review Letters, 2012, 108, 215005.	7.8	57
43	Optimized beryllium target design for indirectly driven inertial confinement fusion experiments on the National Ignition Facility. Physics of Plasmas, 2014, 21, 022701.	1.9	55
44	Achieving record hot spot energies with large HDC implosions on NIF in HYBRID-E. Physics of Plasmas, 2021, 28, .	1.9	55
45	X-ray driven implosions at ignition relevant velocities on the National Ignition Facility. Physics of Plasmas, 2013, 20, .	1.9	54
46	Improving ICF implosion performance with alternative capsule supports. Physics of Plasmas, 2017, 24, .	1.9	54
47	Toward a burning plasma state using diamond ablator inertially confined fusion (ICF) implosions on the National Ignition Facility (NIF). Plasma Physics and Controlled Fusion, 2019, 61, 014023.	2.1	53
48	A survey of pulse shape options for a revised plastic ablator ignition design. Physics of Plasmas, 2014, 21, .	1.9	50
49	Hotspot conditions achieved in inertial confinement fusion experiments on the National Ignition Facility. Physics of Plasmas, 2020, 27, .	1.9	50
50	The role of hot spot mix in the low-foot and high-foot implosions on the NIF. Physics of Plasmas, 2017, 24, .	1.9	49
51	Performance of High-Convergence, Layered DT Implosions with Extended-Duration Pulses at the National Ignition Facility. Physical Review Letters, 2013, 111, 215001.	7.8	47
52	Instability growth seeded by oxygen in CH shells on the National Ignition Facility. Physics of Plasmas, 2015, 22, .	1.9	46
53	Hydrodynamic instability growth of three-dimensional, â€œnative-roughnessâ€•modulations in x-ray driven, spherical implosions at the National Ignition Facility. Physics of Plasmas, 2015, 22, .	1.9	46
54	X-ray shadow imprint of hydrodynamic instabilities on the surface of inertial confinement fusion capsules by the fuel fill tube. Physical Review E, 2017, 95, 031204.	2.1	46

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55	Hot-spot mix in large-scale HDC implosions at NIF. Physics of Plasmas, 2020, 27, .	1.9	46
56	Three-dimensional hydrodynamics of the deceleration stage in inertial confinement fusion. Physics of Plasmas, 2015, 22, 032702.	1.9	45
57	First implosion experiments with cryogenic thermonuclear fuel on the National Ignition Facility. Plasma Physics and Controlled Fusion, 2012, 54, 045013.	2.1	41
58	Mixing in ICF implosions on the National Ignition Facility caused by the fill-tube. Physics of Plasmas, 2020, 27, .	1.9	41
59	The effect of laser pulse shape variations on the adiabat of NIF capsule implosions. Physics of Plasmas, 2013, 20, .	1.9	40
60	Stabilization of high-compression, indirect-drive inertial confinement fusion implosions using a 4-shock adiabat-shaped drive. Physics of Plasmas, 2015, 22, .	1.9	40
61	Capsule modeling of high foot implosion experiments on the National Ignition Facility. Plasma Physics and Controlled Fusion, 2017, 59, 055006.	2.1	40
62	Comparison of plastic, high density carbon, and beryllium as indirect drive NIF ablators. Physics of Plasmas, 2018, 25, .	1.9	39
63	Progress in the indirect-drive National Ignition Campaign. Plasma Physics and Controlled Fusion, 2012, 54, 124026.	2.1	38
64	The effects of early time laser drive on hydrodynamic instability growth in National Ignition Facility implosions. Physics of Plasmas, 2014, 21, .	1.9	38
65	Performance of indirectly driven capsule implosions on the National Ignition Facility using adiabat-shaping. Physics of Plasmas, 2016, 23, 056303.	1.9	38
66	Progress of indirect drive inertial confinement fusion in the United States. Nuclear Fusion, 2019, 59, 112018.	3.5	38
67	First beryllium capsule implosions on the National Ignition Facility. Physics of Plasmas, 2016, 23, 056310.	1.9	37
68	Adiabat-shaping in indirect drive inertial confinement fusion. Physics of Plasmas, 2015, 22, 052702.	1.9	31
69	Review of hydrodynamic instability experiments in inertially confined fusion implosions on National Ignition Facility. Plasma Physics and Controlled Fusion, 2020, 62, 014007.	2.1	31
70	Implosion configurations for robust ignition using high- density carbon (diamond) ablator for indirect-drive ICF at the National Ignition Facility. Journal of Physics: Conference Series, 2016, 717, 012023.	0.4	30
71	Hydrodynamic instability growth of three-dimensional modulations in radiation-driven implosions with â€œlow-footâ€•and â€œhigh-footâ€•drives at the National Ignition Facility. Physics of Plasmas, 2017, 24, .	1.9	30
72	First results of radiation-driven, layered deuterium-tritium implosions with a 3-shock adiabat-shaped drive at the National Ignition Facility. Physics of Plasmas, 2015, 22, .	1.9	29

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73	NIF Ignition Campaign Target Performance and Requirements: Status May 2012. Fusion Science and Technology, 2013, 63, 67-75.	1.1	28
74	Three-dimensional simulations of National Ignition Facility implosions: Insight into experimental	1.9	28
75	Simulations and experiments of the growth of the â€œtentâ€•perturbation in NIF ignition implosions. Journal of Physics: Conference Series, 2016, 717, 012021.	0.4	28
76	Symmetric fielding of the largest diamond capsule implosions on the NIF. Physics of Plasmas, 2020, 27, .	1.9	28
77	Hydrodynamic instabilities in beryllium targets for the National Ignition Facility. Physics of Plasmas, 2014, 21, 092701.	1.9	27
78	Experimental results of radiation-driven, layered deuterium-tritium implosions with adiabat-shaped drives at the National Ignition Facility. Physics of Plasmas, 2016, 23, .	1.9	27
79	Hydro-instability growth of perturbation seeds from alternate capsule-support strategies in indirect-drive implosions on National Ignition Facility. Physics of Plasmas, 2017, 24, 102707.	1.9	27
80	Differential ablator-fuel adiabat tuning in indirect-drive implosions. Physical Review E, 2015, 91, 031101.	2.1	25
81	Hydrodynamic instabilities seeded by the X-ray shadow of ICF capsule fill-tubes. Physics of Plasmas, 2018, 25, .	1.9	25
82	Hotspot parameter scaling with velocity and yield for high-adiabat layered implosions at the National Ignition Facility. Physical Review E, 2020, 102, 023210.	2.1	25
83	Design of indirectly driven, high-compression Inertial Confinement Fusion implosions with improved hydrodynamic stability using a 4-shock adiabat-shaped drive. Physics of Plasmas, 2015, 22, .	1.9	22
84	Integrated performance of large HDC-capsule implosions on the National Ignition Facility. Physics of Plasmas, 2020, 27, .	1.9	22
85	Mitigating the impact of hohlraum asymmetries in National Ignition Facility implosions using capsule shims. Physics of Plasmas, 2016, 23, 072707.	1.9	20
86	Review of hydro-instability experiments with alternate capsule supports in indirect-drive implosions on the National Ignition Facility. Physics of Plasmas, 2018, 25, 072705.	1.9	20
87	Simulations of fill tube effects on the implosion of high-foot NIF ignition capsules. Journal of Physics: Conference Series, 2016, 717, 012013.	0.4	17
88	A â€œpolar contactâ€•tent for reduced perturbation and improved performance of NIF ignition capsules. Physics of Plasmas, 2018, 25, 082714.	1.9	17
89	Update 2015 on Target Fabrication Requirements for NIF Layered Implosions, with Emphasis on Capsule Support and Oxygen Modulations in GDP. Fusion Science and Technology, 2016, 70, 121-126.	1.1	16
90	Cross-code comparison of the impact of the fill tube on high yield implosions on the National Ignition Facility. Physics of Plasmas, 2020, 27, .	1.9	16

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91	Acceleration- and deceleration-phase nonlinear Rayleigh-Taylor growth at spherical interfaces. Physical Review E, 2005, 72, 056308.	2.1	15
92	Nonlinear Rayleigh-Taylor growth in converging geometry. Physical Review E, 2005, 71, 055302.	2.1	15
93	Exploring implosion designs for increased compression on the National Ignition Facility using high density carbon ablators. Physics of Plasmas, 2022, 29, .	1.9	15
94	Single-mode perturbation growth in an idealized spherical implosion. Journal of Computational Physics, 2018, 371, 801-819.	3.8	14
95	Understanding asymmetries using integrated simulations of capsule implosions in low gas-fill hohlraums at the National Ignition Facility. Plasma Physics and Controlled Fusion, 2021, 63, 025012.	2.1	14
96	Prediction of ignition implosion performance using measurements of Low-deuterium surrogates. Journal of Physics: Conference Series, 2010, 244, 022014.	0.4	12
97	Simulations of indirectly driven gas-filled capsules at the National Ignition Facility. Physics of Plasmas, 2014, 21, .	1.9	12
98	Indirect-drive ablative Richtmyer Meshkov node scaling. Journal of Physics: Conference Series, 2016, 717, 012034.	0.4	12
99	Deficiencies in compression and yield in x-ray-driven implosions. Physics of Plasmas, 2020, 27, .	1.9	12
100	Three dimensional low-mode areal-density non-uniformities in indirect-drive implosions at the National Ignition Facility. Physics of Plasmas, 2021, 28, .	1.9	12
101	Experiments to explore the influence of pulse shaping at the National Ignition Facility. Physics of Plasmas, 2020, 27, 112708.	1.9	11
102	Biermann battery magnetic fields in ICF capsules: Total magnetic flux generation. Physics of Plasmas, 2021, 28, .	1.9	10
103	On the design of the NIF Continuum Spectrometer. , 2017, , .		9
104	A simulation-based model for understanding the time dependent x-ray drive asymmetries and error bars in indirectly driven implosions on the National Ignition Facility. Physics of Plasmas, 2019, 26, 062703.	1.9	8
105	Principal factors in performance of indirect-drive laser fusion experiments. Physics of Plasmas, 2020, 27, .	1.9	7
106	Measurements of enhanced performance in an indirect drive inertial confinement fusion experiment when reducing the contact area of the capsule support. Physics of Plasmas, 2020, 27, .	1.9	7
107	A strategy for reducing stagnation phase hydrodynamic instability growth in inertial confinement fusion implosions. Physics of Plasmas, 2015, 22, 052705.	1.9	6
108	Hydroscaling indirect-drive implosions on the National Ignition Facility. Physics of Plasmas, 2022, 29, .	1.9	4

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109	Linear and nonlinear Rayleigh-Taylor growth at strongly convergent spherical interfaces. Physics of Fluids, 2006, 18, 064106.	4.0	3
110	Hydrodynamic growth experiments with the 3-D, â€œnative-roughnessâ€•modulations on NIF. Journal of Physics: Conference Series, 2016, 717, 012052.	0.4	3
111	Hydrodynamic growth and mix experiments at National Ignition Facility. Journal of Physics: Conference Series, 2016, 688, 012113.	0.4	3
112	Capsule Shimming Developments for National Ignition Facility (NIF) Hohlraum Asymmetry Experiments. Fusion Science and Technology, 2018, 73, 279-284.	1.1	3
113	Progress in detailed modelling of low foot and high foot implosion experiments on the National Ignition Facility. Journal of Physics: Conference Series, 2016, 717, 012011.	0.4	2
114	Update 2017 on Target Fabrication Requirements for High-Performance NIF Implosion Experiments. Fusion Science and Technology, 2018, 73, 83-88.	1.1	2
115	Nonlinear Rayleighâ€“Taylor growth in converging geometry. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2005, 544, 324-328.	1.6	1
116	Performance of indirectly driven capsule implosions on NIF using adiabat-shaping. Journal of Physics: Conference Series, 2016, 717, 012045.	0.4	0