S W Haan

List of Publications by Year
in descending order

140 papers	12,139 citations	19657 61 h-index	25787 108 g-index
143 all docs	143 docs citations	143 times ranked	2410 citing authors

#	Article	IF	Citations
1	The physics basis for ignition using indirect-drive targets on the National Ignition Facility. Physics of Plasmas, 2004, 11, 339-491.	1.9	1,618
2	Three-dimensional HYDRA simulations of National Ignition Facility targets. Physics of Plasmas, 2001, 8, 2275-2280.	1.9	579
3	Point design targets, specifications, and requirements for the 2010 ignition campaign on the National Ignition Facility. Physics of Plasmas, 2011, 18, .	1.9	534
4	Design and modeling of ignition targets for the National Ignition Facility. Physics of Plasmas, 1995, 2, 2480-2487.	1.9	329
5	Progress towards ignition on the National Ignition Facility. Physics of Plasmas, 2013, 20, .	1.9	259
6	Onset of nonlinear saturation for Rayleigh-Taylor growth in the presence of a full spectrum of modes. Physical Review A, 1989, 39, 5812-5825.	2.5	251
7	Tuning the Implosion Symmetry of ICF Targets via Controlled Crossed-Beam Energy Transfer. Physical Review Letters, 2009, 102, 025004.	7.8	247
8	Onset of Hydrodynamic Mix in High-Velocity, Highly Compressed Inertial Confinement Fusion Implosions. Physical Review Letters, 2013, 111, 085004.	7.8	215
9	Weakly nonlinear hydrodynamic instabilities in inertial fusion. Physics of Fluids B, 1991, 3, 2349-2355.	1.7	208
10	Fusion Energy Output Greater than the Kinetic Energy of an Imploding Shell at the National Ignition Facility. Physical Review Letters, 2018, 120, 245003.	7.8	205
11	A review of the ablative stabilization of the Rayleighâ€“Taylor instability in regimes relevant to inertial confinement fusion. Physics of Plasmas, 1994, 1, 1379-1389.	1.9	191
12	Three-dimensional simulations of low foot and high foot implosion experiments on the National Ignition Facility. Physics of Plasmas, 2016, 23, .	1.9	162
13	The high-foot implosion campaign on the National Ignition Facility. Physics of Plasmas, 2014, 21, .	1.9	149
14	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
15	Inertially confined fusion plasmas dominated by alpha-particle self-heating. Nature Physics, 2016, 12, 800-806.	16.7	144
16	Threeâ€dimensional simulations of Nova high growth factor capsule implosion experiments. Physics of Plasmas, 1996, 3, 2070-2076.	1.9	143
17	Metrics for long wavelength asymmetries in inertial confinement fusion implosions on the National Ignition Facility. Physics of Plasmas, 2014, 21, .	1.9	140
18	The development and advantages of beryllium capsules for the National Ignition Facility. Physics of Plasmas, 1998, 5, 1953-1959.	1.9	136

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19	Hot-Spot Mix in Ignition-Scale Inertial Confinement Fusion Targets. Physical Review Letters, 2013, 111, 045001.	7.8	135
20	Capsule implosion optimization during the indirect-drive National Ignition Campaign. Physics of Plasmas, 2011, 18, .	1.9	131
21	Detailed implosion modeling of deuterium-tritium layered experiments on the National Ignition Facility. Physics of Plasmas, 2013, 20, 056318.	1.9	128
22	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
23	A comparison of three-dimensional multimode hydrodynamic instability growth on various National Ignition Facility capsule designs withHYDRAsimulations. Physics of Plasmas, 1998, 5, 1125-1132.	1.9	118
24	Neutron spectrometryâ€"An essential tool for diagnosing implosions at the National Ignition Facility (invited). Review of Scientific Instruments, 2012, 83, 10D308.	1.3	117
25	First High-Convergence Cryogenic Implosion in a Near-Vacuum Hohlraum. Physical Review Letters, 2015, 114, 175001.	7.8	117
26	High-density carbon ablator experiments on the National Ignition Facility. Physics of Plasmas, 2014, 21, .	1.9	116
27	Shock timing experiments on the National Ignition Facility: Initial results and comparison with simulation. Physics of Plasmas, 2012, 19, .	1.9	115
28	A high-resolution integrated model of the National Ignition Campaign cryogenic layered experiments. Physics of Plasmas, 2012, 19, .	1.9	108
29	Hot-spot mix in ignition-scale implosions on the NIF. Physics of Plasmas, 2012, 19, .	1.9	107
30	Symmetry control of an indirectly driven high-density-carbon implosion at high convergence and high velocity. Physics of Plasmas, 2017, 24, .	1.9	106
31	Symmetry tuning for ignition capsules via the symcap technique. Physics of Plasmas, 2011, 18, .	1.9	101
32	Demonstration of High Performance in Layered Deuterium-Tritium Capsule Implosions in Uranium Hohlraums at the National Ignition Facility. Physical Review Letters, 2015, 115, 055001.	7.8	101
33	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
34	Cryogenic thermonuclear fuel implosions on the National Ignition Facility. Physics of Plasmas, 2012, 19, .	1.9	95
35	Diagnosing and controlling mix in National Ignition Facility implosion experiments. Physics of Plasmas, 2011, 18, .	1.9	92
36	Ignition target design and robustness studies for the National Ignition Facility. Physics of Plasmas, 1996, 3, 2084-2093.	1.9	91

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37	Probing high areal-density cryogenic deuterium-tritium implosions using downscattered neutron spectra measured by the magnetic recoil spectrometer. Physics of Plasmas, 2010, 17, .	1.9	91
38	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
39	Plastic ablator ignition capsule design for the National Ignition Facility. Physics of Plasmas, 2010, 17, .	1.9	89
40	Short-wavelength and three-dimensional instability evolution in National Ignition Facility ignition capsule designs. Physics of Plasmas, 2011, 18, .	1.9	87
41	Design of inertial fusion implosions reaching the burning plasma regime. Nature Physics, 2022, 18, 251-258.	16.7	87
42	Shock timing technique for the National Ignition Facility. Physics of Plasmas, 2001, 8, 2245-2250.	1.9	86
43	Effect of the mounting membrane on shape in inertial confinement fusion implosions. Physics of Plasmas, 2015, 22, .	1.9	85
44	Increasing robustness of indirect drive capsule designs against short wavelength hydrodynamic instabilities. Physics of Plasmas, 2005, 12, 056316.	1.9	84
45	Diagnosing implosion performance at the National Ignition Facility (NIF) by means of neutron spectrometry. Nuclear Fusion, 2013, 53, 043014.	3.5	84
46	Precision Shock Tuning on the National Ignition Facility. Physical Review Letters, 2012, 108, 215004.	7.8	83
47	Analysis of the National Ignition Facility ignition hohlraum energetics experiments. Physics of Plasmas, 2011, 18, .	1.9	82
48	of Plasmas, 2015, 22, 056315.	1.9	82
49	Dynamic symmetry of indirectly driven inertial confinement fusion capsules on the National Ignition Facility. Physics of Plasmas, 2014, 21, .	1.9	81
50	Diagnosis of Pusher-Fuel Mix in Indirectly Driven Nova Implosions. Physical Review Letters, 1994, 73, 2324-2327.	7.8	78
51	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
52	Reduced instability growth with high-adiabat high-foot implosions at the National Ignition Facility. Physical Review E, 2014, 90, 011102.	2.1	77
53	The velocity campaign for ignition on NIF. Physics of Plasmas, 2012, 19, .	1.9	76
54	Large growth Rayleigh-Taylor experiments using shaped laser pulses. Physical Review Letters, 1991, 67, 3259-3262.	7.8	75

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55	Nonlinear Rayleigh-Taylor Evolution of a Three-Dimensional Multimode Perturbation. Physical Review Letters, 1998, 80, 4426-4429.	7.8	71
56	Robustness studies of ignition targets for the National Ignition Facility in two dimensions. Physics of Plasmas, 2008, 15, .	1.9	71
57	Three-Dimensional Single Mode Rayleigh-Taylor Experiments on Nova. Physical Review Letters, 1995, 75, 3677-3680.	7.8	65
58	Nuclear imaging of the fuel assembly in ignition experiments. Physics of Plasmas, 2013, 20, 056320.	1.9	65
59	Indirect drive ignition at the National Ignition Facility. Plasma Physics and Controlled Fusion, 2017, 59, 014021.	2.1	64
60	Numerical Modeling of the Sensitivity of X-Ray Driven Implosions to Low-Mode Flux Asymmetries. Physical Review Letters, 2013, 110, 075001.	7.8	63
61	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
62	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
63	Hydrodynamic instability growth and mix experiments at the National Ignition Facility. Physics of Plasmas, 2014, 21, .	1.9	60
64	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
65	Hohlraum energetics scaling to 520 TW on the National Ignition Facility. Physics of Plasmas, 2013, 20, .	1.9	59
66	Integrated modeling of cryogenic layered highfoot experiments at the NIF. Physics of Plasmas, 2016, 23, .	1.9	59
67	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
68	Thin Shell, High Velocity Inertial Confinement Fusion Implosions on the National Ignition Facility. Physical Review Letters, 2015, 114, 145004.	7.8	56
69	Achieving record hot spot energies with large HDC implosions on NIF in HYBRID-E. Physics of Plasmas, 2021, 28, .	1.9	55
70	NIF Capsule Design Update. Fusion Science and Technology, 1997, 31, 402-405.	0.6	54
71	Improving ICF implosion performance with alternative capsule supports. Physics of Plasmas, 2017, 24, .	1.9	54
72	Shock propagation, preheat, and x-ray burnthrough in indirect-drive inertial confinement fusion ablator materials. Physics of Plasmas, 2004, 11, 2778-2789.	1.9	53

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73	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
74	The near vacuum hohlraum campaign at the NIF: A new approach. Physics of Plasmas, 2016, 23, .	1.9	51
75	Progress toward a self-consistent set of 1D ignition capsule metrics in ICF. Physics of Plasmas, 2018, 25, .	1.9	51
76	Reduced scale National Ignition Facility capsule design. Physics of Plasmas, 1998, 5, 3708-3713.	1.9	50
77	A survey of pulse shape options for a revised plastic ablator ignition design. Physics of Plasmas, 2014, 21, .	1.9	50
78	2015, 22, 056314.	1.9	49
79	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
80	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
81	Instability growth seeded by oxygen in CH shells on the National Ignition Facility. Physics of Plasmas, 2015, 22, .	1.9	46
82	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
83	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
84	Three-dimensional hydrodynamics of the deceleration stage in inertial confinement fusion. Physics of Plasmas, 2015, 22, 032702.	1.9	45
85	Direct Measurement of Energetic Electrons Coupling to an Imploding Low-Adiabat Inertial Confinement Fusion Capsule. Physical Review Letters, 2012, 108, 135006.	7.8	44
86	Development of the CD Symcap platform to study gas-shell mix in implosions at the National Ignition Facility. Physics of Plasmas, 2014, 21, .	1.9	42
87	First implosion experiments with cryogenic thermonuclear fuel on the National Ignition Facility. Plasma Physics and Controlled Fusion, 2012, 54, 045013.	2.1	41
88	Modeling of Nova indirect drive Rayleighâ€“Taylor experiments. Physics of Plasmas, 1994, 1, 3652-3661.	1.9	40
89	The effect of laser pulse shape variations on the adiabat of NIF capsule implosions. Physics of Plasmas, 2013, 20, .	1.9	40
90	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

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91	Capsule modeling of high foot implosion experiments on the National Ignition Facility. Plasma Physics and Controlled Fusion, 2017, 59, 055006.	2.1	40
92	Evidence of Three-Dimensional Asymmetries Seeded by High-Density Carbon-Ablator Nonuniformity in Experiments at the National Ignition Facility. Physical Review Letters, 2021, 126, 025002.	7.8	40
93	Comparison of plastic, high density carbon, and beryllium as indirect drive NIF ablators. Physics of Plasmas, 2018, 25, .	1.9	39
94	Progress in the indirect-drive National Ignition Campaign. Plasma Physics and Controlled Fusion, 2012, 54, 124026.	2.1	38
95	Performance of indirectly driven capsule implosions on the National Ignition Facility using adiabat-shaping. Physics of Plasmas, 2016, 23, 056303.	1.9	38
96	Progress of indirect drive inertial confinement fusion in the United States. Nuclear Fusion, 2019, 59, 112018.	3.5	38
97	First beryllium capsule implosions on the National Ignition Facility. Physics of Plasmas, 2016, 23, 056310.	1.9	37
98	A simple time-dependent analytic model of the P2 asymmetry in cylindrical hohlraums. Physics of Plasmas, 1999, 6, 2137-2143.	1.9	35
99	Very-high-growth-factor planar ablative Rayleigh-Taylor experiments. Physics of Plasmas, 2007, 14, 056313.	1.9	34
100	Probing the seeding of hydrodynamic instabilities from nonuniformities in ablator materials using 2D velocimetry. Physics of Plasmas, 2018, 25, .	1.9	32
101	Adiabat-shaping in indirect drive inertial confinement fusion. Physics of Plasmas, 2015, 22, 052702.	1.9	31
102	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
103	Probing the deep nonlinear stage of the ablative Rayleigh-Taylor instability in indirect drive experiments on the National Ignition Facility. Physics of Plasmas, 2015, 22, .	1.9	30
104	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
105	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
106	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
107	Spectroscopic determination of temperature and density spatial profiles and mix in indirect-drive implosion cores. Physical Review E, 2007, 76, 056403.	2.1	28
108	NIF Ignition Campaign Target Performance and Requirements: Status May 2012. Fusion Science and Technology, 2013, 63, 67-75.	1.1	28

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109	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
110	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
111	Shock Compression of Liquid Deuterium up to 1ÂTPa. Physical Review Letters, 2019, 122, 255702.	7.8	26
112	National Ignition Facility targets driven at high radiation temperature: Ignition, hydrodynamic stability, and laserâ€“plasma interactions. Physics of Plasmas, 2004, 11, 1128-1144.	1.9	24
113	Visualizing deceleration-phase instabilities in inertial confinement fusion implosions using an â€œenhanced self-emissionâ€•technique at the National Ignition Facility. Physics of Plasmas, 2018, 25, 054502.	1.9	22
114	Extensions of a classical mechanics â€œpiston-modelâ€•for understanding the impact of asymmetry on ICF implosions: The cases of mode 2, mode 2/1 coupling, time-dependent asymmetry, and the relationship to coast-time. Physics of Plasmas, 2022, 29, .	1.9	22
115	Measuring the shock impedance mismatch between high-density carbon and deuterium at the National Ignition Facility. Physical Review B, 2018, 97, .	3.2	21
116	Effects of variable xâ€•ray preheat shielding in indirectly driven implosions. Physics of Plasmas, 1996, 3, 2094-2097.	1.9	20
117	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
118	A â€œpolar contactâ€•tent for reduced perturbation and improved performance of NIF ignition capsules. Physics of Plasmas, 2018, 25, 082714.	1.9	17
119	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
120	Development of new platforms for hydrodynamic instability and asymmetry measurements in deceleration phase of indirectly driven implosions on NIF. Physics of Plasmas, 2018, 25, 082705.	1.9	15
121	Performance of beryllium targets with full-scale capsules in low-fill 6.72-mm hohlraums on the National Ignition Facility. Physics of Plasmas, 2017, 24, .	1.9	14
122	Experimental studies of ICF indirect-drive Be and high density C candidate ablators. Journal of Physics: Conference Series, 2008, 112, 022004.	0.4	13
123	Instability growth seeded by DT density perturbations in ICF capsules. Physics of Plasmas, 2018, 25, .	1.9	13
124	Prediction of ignition implosion performance using measurements of Low-deuterium surrogates. Journal of Physics: Conference Series, 2010, 244, 022014.	0.4	12
125	Simulations of indirectly driven gas-filled capsules at the National Ignition Facility. Physics of Plasmas, 2014, 21, .	1.9	12
126	Surface oxygen micropatterns on glow discharge polymer targets by photo irradiation. Journal of Applied Physics, 2016, 119, .	2.5	12

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127	Fuel convergence sensitivity in indirect drive implosions. Physics of Plasmas, 2021, 28, 042705.	1.9	11
128	Hydrodynamic instability seeding by oxygen nonuniformities in glow discharge polymer inertial fusion ablators. Physical Review E, 2018, 98, .	2.1	10
129	Yield and hydrodynamic instability versus absorbed energy for a uniformly doped beryllium 250â€‚eV ignition capsule. Physics of Plasmas, 2004, 11, 4695-4700.	1.9	8
130	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
131	Design of a 250â€‚eV cryogenic ignition capsule for the National Ignition Facility. Physics of Plasmas, 2004, 11, 4261-4266.	1.9	7
132	Quantitative Defect Analysis of Ablator Capsule Surfaces Using a Leica Confocal Microscope and a High-Density Atomic Force Microscope. Fusion Science and Technology, 2016, 70, 377-386.	1.1	7
133	Experimental evidence of a bubble-merger regime for the Rayleigh-Taylor Instability at the ablation front. Journal of Physics: Conference Series, 2016, 717, 012010.	0.4	5
134	Diagnosing implosions at the national ignition facility with X-ray spectroscopy. AIP Conference Proceedings, 2012, , .	0.4	3
135	Hydrodynamic growth experiments with the 3-D, â€œnative-roughnessâ€•modulations on NIF. Journal of Physics: Conference Series, 2016, 717, 012052.	0.4	3
136	Hydrodynamic growth and mix experiments at National Ignition Facility. Journal of Physics: Conference Series, 2016, 688, 012113.	0.4	3
137	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
138	Use of 41Ar production to measure ablator areal density in NIF beryllium implosions. Physics of Plasmas, 2017, 24, .	1.9	2
139	Update 2017 on Target Fabrication Requirements for High-Performance NIF Implosion Experiments. Fusion Science and Technology, 2018, 73, 83-88.	1.1	2
140	Performance of indirectly driven capsule implosions on NIF using adiabat-shaping. Journal of Physics: Conference Series, 2016, 717, 012045.	0.4	0