

Keith Burrell

List of Publications by Year in descending order

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105
papers

8,490
citations

50170
46
h-index

42291
92
g-index

110
all docs

110
docs citations

110
times ranked

2198
citing authors

#	ARTICLE	IF	CITATIONS
1	Effects of $E \times B$ velocity shear and magnetic shear on turbulence and transport in magnetic confinement devices. <i>Physics of Plasmas</i> , 1997, 4, 1499-1518.	0.7	1,218
2	Flow shear induced fluctuation suppression in finite aspect ratio shaped tokamak plasma. <i>Physics of Plasmas</i> , 1995, 2, 1648-1651.	0.7	548
3	Edge stability and transport control with resonant magnetic perturbations in collisionless tokamak plasmas. <i>Nature Physics</i> , 2006, 2, 419-423.	6.5	538
4	Role of edge electric field and poloidal rotation in the L-H transition. <i>Physical Review Letters</i> , 1990, 64, 3015-3018.	2.9	506
5	Beyond paradigm: Turbulence, transport, and the origin of the radial electric field in low to high confinement mode transitions in the DIII-D tokamak. <i>Physics of Plasmas</i> , 1995, 2, 2397-2407.	0.7	265
6	Role of Zonal Flow Predator-Prey Oscillations in Triggering the Transition to H-Mode Confinement. <i>Physical Review Letters</i> , 2012, 108, 155002.	2.9	245
7	Modifications in turbulence and edge electric fields at the L-H transition in the DIII-D tokamak. <i>Physics of Fluids B</i> , 1991, 3, 2300-2307.	1.7	221
8	Physics of the L-mode to H-mode transition in tokamaks. <i>Plasma Physics and Controlled Fusion</i> , 1992, 34, 1859-1869.	0.9	199
9	Quiescent double barrier high-confinement mode plasmas in the DIII-D tokamak. <i>Physics of Plasmas</i> , 2001, 8, 2153-2162.	0.7	190
10	Role of the radial electric field in the transition from L (low) mode to H (high) mode to VH (very high) mode in the DIII-D tokamak*. <i>Physics of Plasmas</i> , 1994, 1, 1536-1544.	0.7	166
11	Rotation characteristics of main ions and impurity ions in H-mode tokamak plasma. <i>Physical Review Letters</i> , 1994, 72, 2199-2202.	2.9	159
12	Tests of causality: Experimental evidence that sheared $E \times B$ flow alters turbulence and transport in tokamaks. <i>Physics of Plasmas</i> , 1999, 6, 4418-4435.	0.7	154
13	Quiescent H-mode plasmas in the DIII-D tokamak. <i>Plasma Physics and Controlled Fusion</i> , 2002, 44, A253-A263.	0.9	149
14	Confinement physics of H-mode discharges in DIII-D. <i>Plasma Physics and Controlled Fusion</i> , 1989, 31, 1649-1664.	0.9	140
15	The EPED pedestal model and edge localized mode-suppressed regimes: Studies of quiescent H-mode and development of a model for edge localized mode suppression via resonant magnetic perturbations. <i>Physics of Plasmas</i> , 2012, 19, .	0.7	140
16	Quiescent Double Barrier Regime in the DIII-D Tokamak. <i>Physical Review Letters</i> , 2001, 86, 4544-4547.	2.9	134
17	Higher Fusion Power Gain with Current and Pressure Profile Control in Strongly Shaped DIII-D Tokamak Plasmas. <i>Physical Review Letters</i> , 1996, 77, 2714-2717.	2.9	128
18	Advances in understanding quiescent H-mode plasmas in DIII-D. <i>Physics of Plasmas</i> , 2005, 12, 056121.	0.7	119

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19	Intrinsic rotation in DIII-D. Physics of Plasmas, 2007, 14, 056115.	0.7	112
20	ELM suppression in low edge collisionality H-mode discharges using $n=3$ magnetic perturbations. Plasma Physics and Controlled Fusion, 2005, 47, B37-B52.	0.9	109
21	Toroidal rotation in DIII-D in electron cyclotron heating and Ohmic H-mode discharges. Physics of Plasmas, 2004, 11, 4323-4331.	0.7	97
22	Observation of an improved energy-confinement regime in neutral-beam-heated divertor discharges in the DIII-D tokamak. Physical Review Letters, 1987, 59, 1432-1435.	2.9	96
23	High spatial and temporal resolution visible spectroscopy of the plasma edge in DIII-D. Review of Scientific Instruments, 1990, 61, 2949-2951.	0.6	96
24	Experimental test of the neoclassical theory of impurity poloidal rotation in tokamaks. Physics of Plasmas, 2006, 13, 056116.	0.7	96
25	Momentum confinement at low torque. Plasma Physics and Controlled Fusion, 2007, 49, B313-B324.	0.9	84
26	Summary of experimental progress and suggestions for future work (H mode confinement). Plasma Physics and Controlled Fusion, 1994, 36, A291-A306.	0.9	81
27	Motional Stark effect polarimetry for a current profile diagnostic in DIII-D. Review of Scientific Instruments, 1990, 61, 3552-3556.	0.6	79
28	Helium transport and exhaust studies in enhanced confinement regimes in DIII-D. Physics of Plasmas, 1995, 2, 2357-2365.	0.7	76
29	Gyrokinetic simulations of off-axis minimum-q profile corrugations. Physics of Plasmas, 2006, 13, 052301.	0.7	75
30	Edge stability of stationary ELM-suppressed regimes on DIII-D. Journal of Physics: Conference Series, 2008, 123, 012014.	0.3	75
31	Mechanisms for generating toroidal rotation in tokamaks without external momentum input. Physics of Plasmas, 2010, 17, .	0.7	74
32	Core barrier formation near integer q surfaces in DIII-D. Physics of Plasmas, 2006, 13, 082502.	0.7	73
33	Quiescent H-Mode Plasmas with Strong Edge Rotation in the Cocurrent Direction. Physical Review Letters, 2009, 102, 155003.	2.9	70
34	Advances in validating gyrokinetic turbulence models against L- and H-mode plasmas. Physics of Plasmas, 2011, 18, 056113.	0.7	69
35	Measurement of the D^{\pm} spectrum produced by fast ions in DIII-D. Review of Scientific Instruments, 2007, 78, 033505.	0.6	64
36	Active spectroscopic measurements of the bulk deuterium properties in the DIII-D tokamak (invited). Review of Scientific Instruments, 2012, 83, 10D529.	0.6	64

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37	Measurements of the deuterium ion toroidal rotation in the DIII-D tokamak and comparison to neoclassical theory. Physics of Plasmas, 2012, 19, .	0.7	62
38	Measurements of plasma ion temperature and rotation velocity using the He II 4686 Å... line produced by charge transfer. Applied Physics Letters, 1983, 43, 920-922.	1.5	59
39	Discovery of stationary operation of quiescent H-mode plasmas with net-zero neutral beam injection torque and high energy confinement on DIII-D. Physics of Plasmas, 2016, 23, .	0.7	59
40	Improved charge-coupled device detectors for high-speed, charge exchange spectroscopy studies on the DIII-D tokamak. Review of Scientific Instruments, 2004, 75, 3455-3457.	0.6	57
41	Multichordal charge exchange recombination spectroscopy on the Doublet III tokamak. Review of Scientific Instruments, 1986, 57, 155-163.	0.6	55
42	Improved edge charge exchange recombination spectroscopy in DIII-D. Review of Scientific Instruments, 2016, 87, 11E512.	0.6	54
43	Access to a New Plasma Edge State with High Density and Pressures using the Quiescent H -Mode. Physical Review Letters, 2014, 113, 135001.	2.9	53
44	Extraction of poloidal velocity from charge exchange recombination spectroscopy measurements. Review of Scientific Instruments, 2004, 75, 3481-3486.	0.6	52
45	Investigations of VH-mode in DIII-D and JET. Plasma Physics and Controlled Fusion, 1993, 35, B263-B276.	0.9	49
46	Impurity confinement and transport in high confinement regimes without edge localized modes on	0.7	47
47	The quiescent H-mode regime for high performance edge localized mode-stable operation in future	0.7	45
48	Reactor-relevant quiescent H-mode operation using torque from non-axisymmetric, non-resonant magnetic fields. Physics of Plasmas, 2012, 19, .	0.7	44
49	Improved charge coupled device detectors for the edge charge exchange spectroscopy system on the DIII-D tokamak. Review of Scientific Instruments, 2001, 72, 1028-1033.	0.6	43
50	Experimental Investigation of the Role of Fluid Turbulent Stresses and Edge Plasma Flows for Intrinsic Rotation Generation in DIII-D H -Mode Plasmas. Physical Review Letters, 2011, 106, 115001.	2.9	43
51	Spectroscopic study of edge poloidal rotation and radial electric fields in the DIII-D tokamak (invited). Review of Scientific Instruments, 1990, 61, 2920-2925.	0.6	40
52	Main ion and impurity edge profile evolution across the L- to H-mode transition on DIII-D. Plasma Physics and Controlled Fusion, 2018, 60, 105001.	0.9	38
53	Effects of velocity shear and magnetic shear in the formation of core transport barriers in the DIII-D tokamak. Plasma Physics and Controlled Fusion, 1998, 40, 1585-1596.	0.9	37
54	Chapter 6: Active Spectroscopy. Fusion Science and Technology, 2008, 53, 487-527.	0.6	36

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55	The quiescent double barrier regime in the DIII-D tokamak. Plasma Physics and Controlled Fusion, 2001, 43, A95-A112.	0.9	35
56	Intrinsic rotation generation in ELM-free H-mode plasmas in the DIII-D tokamak—Experimental observations. Physics of Plasmas, 2011, 18, .	0.7	35
57	The back transition and hysteresis effects in DIII-D. Plasma Physics and Controlled Fusion, 1998, 40, 707-712.	0.9	34
58	Kinetic neoclassical transport in the H-mode pedestal. Physics of Plasmas, 2014, 21, .	0.7	34
59	Predicting rotation for ITER via studies of intrinsic torque and momentum transport in DIII-D. Physics of Plasmas, 2017, 24, .	0.7	34
60	Active spectroscopy measurements of the deuterium temperature, rotation, and density from the core to scrape off layer on the DIII-D tokamak (invited). Review of Scientific Instruments, 2018, 89, 10D110.	0.6	34
61	Role of density gradient driven trapped electron mode turbulence in the H-mode inner core with electron heating. Physics of Plasmas, 2016, 23, 056112.	0.7	33
62	Role of sheared $\langle \mathbf{E} \times \mathbf{B} \rangle$ flow in self-organized, improved confinement states in magnetized plasmas. Physics of Plasmas, 2020, 27, .	0.7	33
63	Recent VH-mode results on DIII-D. Plasma Physics and Controlled Fusion, 1994, 36, A237-A242.	0.9	30
64	Edge-Localized-Mode—Induced Transport of Impurity Density, Energy, and Momentum. Physical Review Letters, 2005, 94, 225001.	2.9	30
65	Multichordal visible/near-UV spectroscopy on the DIII-D tokamak. Review of Scientific Instruments, 1988, 59, 1530-1532.	0.6	27
66	Active and passive spectroscopic imaging in the DIII-D tokamak. Plasma Physics and Controlled Fusion, 2010, 52, 045006.	0.9	27
67	Poloidally and radially resolved parallel D+ velocity measurements in the DIII-D boundary and comparison to neoclassical computations. Physics of Plasmas, 2011, 18, 032510.	0.7	27
68	Localized Turbulence Suppression and Increased Flow Shear near the $q=2$ Surface during Internal-Transport-Barrier Formation. Physical Review Letters, 2009, 103, 075004.	2.9	26
69	Comparison of toroidal rotation velocities of different impurity ions in the DIII-D tokamak. Physics of Plasmas, 2004, 11, 3100-3105.	0.7	25
70	Fast-ion D^{\pm} measurements and simulations in quiet plasmas. Physics of Plasmas, 2007, 14, .	0.7	25
71	Characterization of cross-section correction to charge exchange recombination spectroscopy rotation measurements using co- and counter-neutral-beam views. Review of Scientific Instruments, 2008, 79, 10F531.	0.6	24
72	Measurements of the internal magnetic field on DIII-D using intensity and spacing of the motional Stark multiplet. Review of Scientific Instruments, 2008, 79, 10F517.	0.6	24

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73	Deuterium velocity and temperature measurements on the DIII-D tokamak. Review of Scientific Instruments, 2010, 81, 10D735.	0.6	24
74	Measurements of the internal magnetic field using the B-Stark motional Stark effect diagnostic on DIII-D (invited). Review of Scientific Instruments, 2010, 81, 10D729.	0.6	24
75	High resolution main-ion charge exchange spectroscopy in the DIII-D H-mode pedestal. Review of Scientific Instruments, 2016, 87, 11E545.	0.6	24
76	Measurement of deuterium density profiles in the H-mode steep gradient region using charge exchange recombination spectroscopy on DIII-D. Review of Scientific Instruments, 2016, 87, 11E553.	0.6	24
77	Exploration of the Super H-mode regime on DIII-D and potential advantages for burning plasma devices. Physics of Plasmas, 2016, 23, .	0.7	20
78	Microturbulence damping mechanisms in the DIII-D tokamak*. Physics of Fluids B, 1993, 5, 2428-2436.	1.7	18
79	Wavelength calibration of the charge exchange recombination spectroscopy system on the DIII-D tokamak. Review of Scientific Instruments, 1999, 70, 878-881.	0.6	18
80	Calculation of impurity poloidal rotation from measured poloidal asymmetries in the toroidal rotation of a tokamak plasma. Review of Scientific Instruments, 2012, 83, 10D501.	0.6	18
81	A fast charge coupled device detector for charge exchange recombination spectroscopy on the DIII-D Tokamak. Review of Scientific Instruments, 1997, 68, 1233-1237.	0.6	17
82	Dependence of intrinsic torque and momentum confinement on normalized gyroradius and collisionality in the DIII-D tokamak. Physics of Plasmas, 2017, 24, 042501.	0.7	17
83	E \times B-flow shear effects on radial correlation length of turbulence and gyroradius scaling of confinement. Physics of Plasmas, 1996, 3, 427-429.	0.7	14
84	Testing neoclassical and turbulent effects on poloidal rotation in the core of DIII-D. Physics of Plasmas, 2014, 21, .	0.7	13
85	Straightforward correction for the astigmatism of a Czerny-Turner spectrometer. Review of Scientific Instruments, 2010, 81, 023503.	0.6	11
86	MHD modeling of a DIII-D low-torque QH-mode discharge and comparison to observations. Physics of Plasmas, 2017, 24, .	0.7	11
87	Pedestal profiles during QH-mode operation on DIII-D. Plasma Physics and Controlled Fusion, 2004, 46, A179-A186.	0.9	9
88	Quasistationary Plasma Predator-Prey System of Coupled Turbulence, Drive, and Sheared $E \times B$ Flow During High Performance DIII-D Tokamak Discharges. Physical Review Letters, 2018, 120, 135002.	2.9	8
89	Role of $E \times B$ Shear and Magnetic Shear in the Formation of Transport Barriers in DIII-D. Fusion Science and Technology, 2005, 48, 1021-1041.	0.6	8
90	A method for determining poloidal rotation from poloidal asymmetry in toroidal rotation (invited). Review of Scientific Instruments, 2014, 85, 11E302.	0.6	6

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91	Investigation of peeling-ballooning stability prior to transient outbursts accompanying transitions out of H-mode in DIII-D. Physics of Plasmas, 2015, 22, .	0.7	6
92	Long-lived predator-prey dynamics in the pedestal of near-zero torque high performance DIII-D plasmas. Physics of Plasmas, 2019, 26, 092501.	0.7	6
93	High speed measurements of neutral beam turn-on and impact of beam modulation on measurements of ion density. Review of Scientific Instruments, 2014, 85, 103502.	0.6	5
94	Evolution of E \times B shear and coherent fluctuations prior to H-L transitions in DIII-D and control strategies for H-L transitions. Physics of Plasmas, 2015, 22, .	0.7	5
95	Improved kinetic neoclassical transport calculation for a low-collisionality QH-mode pedestal. Plasma Physics and Controlled Fusion, 2016, 58, 085009.	0.9	5
96	Cross-calibrating spatial positions of light-viewing diagnostics using plasma edge sweeps in DIII-D. Review of Scientific Instruments, 2003, 74, 5084-5089.	0.6	4
97	Relative intensity calibration of the DIII-D charge-exchange recombination spectroscopy system using neutral beam injection into gas. Review of Scientific Instruments, 2018, 89, 10D116.	0.6	4
98	Spatial calibration of a tokamak neutral beam diagnostic using in situ neutral beam emission. Review of Scientific Instruments, 2015, 86, 103509.	0.6	3
99	Using motional Stark splitting of D \pm emission to constrain MHD equilibrium analysis in DIII-D plasmas. Review of Scientific Instruments, 2018, 89, 10D111.	0.6	3
100	Synthetic diagnostic for assessing spatial averaging of charge exchange recombination spectroscopy measurements. Review of Scientific Instruments, 2018, 89, 10D101.	0.6	3
101	Numerical modeling of pedestal stability and broadband turbulence of wide-pedestal QH-mode plasmas on DIII-D. Nuclear Fusion, 2022, 62, 076033.	1.6	3
102	Functional form for plasma velocity in a rapidly rotating tokamak discharge. Physics of Plasmas, 2014, 21, 072316.	0.7	2
103	Stabilization of kink/peeling modes by coupled rotation and ion diamagnetic drift effects in QH-mode plasmas in DIII-D and JT-60U. Nuclear Fusion, 0, , .	1.6	2
104	Charge exchange recombination spectroscopy measurements of DIII-D poloidal rotation with poloidal asymmetry in angular rotation. Review of Scientific Instruments, 2021, 92, 043518.	0.6	0
105	Turbulence-driven flow dynamics in general axisymmetric toroidal geometry. Physics of Plasmas, 2021, 28, 062502.	0.7	0