

Xue-qiao Xu

List of Publications by Year in descending order

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156
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156
times ranked

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citing authors

#	ARTICLE	IF	CITATIONS
1	Edge localized modes and the pedestal: A model based on coupled peeling"ballooning modes. Physics of Plasmas, 2002, 9, 2037-2043.	1.9	640
2	BOUT++: A framework for parallel plasma fluid simulations. Computer Physics Communications, 2009, 180, 1467-1480.	7.5	350
3	A first-principles predictive model of the pedestal height and width: development, testing and ITER optimization with the EPED model. Nuclear Fusion, 2011, 51, 103016.	3.5	342
4	Transport by intermittency in the boundary of the DIII-D tokamak. Physics of Plasmas, 2003, 10, 1670-1677.	1.9	273
5	Stability and dynamics of the edge pedestal in the low collisionality regime: physics mechanisms for steady-state ELM-free operation. Nuclear Fusion, 2007, 47, 961-968.	3.5	216
6	Observations of the turbulence in the scrape-off-layer of Alcator C-Mod and comparisons with simulation. Physics of Plasmas, 2003, 10, 1739-1747.	1.9	203
7	ELMs and constraints on the H-mode pedestal: peeling"ballooning stability calculation and comparison with experiment. Nuclear Fusion, 2004, 44, 320-328.	3.5	192
8	Low-to-high confinement transition simulations in divertor geometry. Physics of Plasmas, 2000, 7, 1951-1958.	1.9	168
9	Experimental characterization of coherent, radially-sheared zonal flows in the DIII-D tokamak. Physics of Plasmas, 2003, 10, 1712-1719.	1.9	168
10	Numerical simulation of ion"temperature"gradient"driven modes. Physics of Fluids B, 1991, 3, 627-643.	1.7	137
11	Progress in the peeling-ballooning model of edge localized modes: Numerical studies of nonlinear dynamics. Physics of Plasmas, 2005, 12, 056115.	1.9	130
12	Nonlinear Simulations of Peeling-Ballooning Modes with Anomalous Electron Viscosity and their Role in Edge Localized Mode Crashes. Physical Review Letters, 2010, 105, 175005.	7.8	129
13	New Edge Coherent Mode Providing Continuous Transport in Long-Pulse H-mode Plasmas. Physical Review Letters, 2014, 112, 185004.	7.8	93
14	Observation and characterization of radially sheared zonal flows in DIII-D. Plasma Physics and Controlled Fusion, 2003, 45, A477-A485.	2.1	90
15	Experimental and Theoretical Study of Quasicoherent Fluctuations in Enhanced D \pm Plasmas in the Alcator C-Mod Tokamak. Physical Review Letters, 2002, 89, 225004.	7.8	87
16	Kinetic effects in tokamak scrape-off layer plasmas. Physics of Plasmas, 1997, 4, 1672-1680.	1.9	83
17	Electron temperature gradient induced instability in tokamak scrape-off layers. Nuclear Fusion, 1993, 33, 263-282.	3.5	79
18	Dependence of the L- to H-mode power threshold on toroidal rotation and the link to edge turbulence dynamics. Nuclear Fusion, 2009, 49, 115016.	3.5	70

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19	Nonlinear ELM simulations based on a nonideal peeling-ballooning model using the BOUT++ code. Nuclear Fusion, 2011, 51, 103040.	3.5	65
20	Influence of equilibrium shear flow on peeling-ballooning instability and edge localized mode crash. Physics of Plasmas, 2012, 19, .	1.9	65
21	Tempest Simulations of Collisionless Damping of the Geodesic-Acoustic Mode in Edge-Plasma Pedestals. Physical Review Letters, 2008, 100, 215001.	7.8	63
22	Blob Dynamics in 3D BOUT Simulations of Tokamak Edge Turbulence. Physical Review Letters, 2004, 93, 265001.	7.8	60
23	Experiments and simulation of edge turbulence and filaments in MAST. Plasma Physics and Controlled Fusion, 2008, 50, 124012.	2.1	60
24	Simulation of edge localized modes using BOUT++. Plasma Physics and Controlled Fusion, 2011, 53, 054005.	2.1	60
25	Transitions of turbulence in plasma density limits. Physics of Plasmas, 2003, 10, 1773-1781.	1.9	52
26	Scrape-Off Layer Turbulence Theory and Simulations. Contributions To Plasma Physics, 1998, 38, 158-170.	1.1	51
27	Overview of the initial NSTX experimental results. Nuclear Fusion, 2001, 41, 1435-1447.	3.5	49
28	The national spherical torus experiment (NSTX) research programme and progress towards high beta, long pulse operating scenarios. Nuclear Fusion, 2003, 43, 1653-1664.	3.5	49
29	BOUT++: Recent and current developments. Journal of Plasma Physics, 2015, 81, .	2.1	49
30	Resistive modes in the edge and scrape-off layer of diverted tokamaks. Physics of Plasmas, 2000, 7, 4622-4631.	1.9	47
31	Structure, stability and ELM dynamics of the H-mode pedestal in DIII-D. Nuclear Fusion, 2005, 45, 1493-1502.	3.5	47
32	Geometric gyrokinetic theory for edge plasmas. Physics of Plasmas, 2007, 14, 056110.	1.9	47
33	Initial physics results from the National Spherical Torus Experiment. Physics of Plasmas, 2001, 8, 1977-1987.	1.9	46
34	Edge gyrokinetic theory and continuum simulations. Nuclear Fusion, 2007, 47, 809-816.	3.5	46
35	Dynamical simulations of boundary plasma turbulence in divertor geometry. New Journal of Physics, 2002, 4, 53-53.	2.9	45
36	Status and verification of edge plasma turbulence code BOUT. Computer Physics Communications, 2009, 180, 887-903.	7.5	43

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37	Simulations of tokamak boundary plasma turbulence transport in setting the divertor heat flux width. Nuclear Fusion, 2019, 59, 126039.	3.5	43
38	Promising High-Confinement Regime for Steady-State Fusion. Physical Review Letters, 2019, 122, 255001.	7.8	43
39	Gyro-fluid and two-fluid theory and simulations of edge-localized-modes. Physics of Plasmas, 2013, 20, .	1.9	42
40	Overview of results from the National Spherical Torus Experiment (NSTX). Nuclear Fusion, 2009, 49, 104016.	3.5	41
41	Turbulence studies in tokamak boundary plasmas with realistic divertor geometry. Nuclear Fusion, 2000, 40, 731-736.	3.5	39
42	Nonlinear fluid simulation of particle and heat fluxes during burst of ELMs on DIII-D with BOUT++ code. Nuclear Fusion, 2015, 55, 113030.	3.5	38
43	Physics and performance of the I-mode regime over an expanded operating space on Alcator C-Mod. Nuclear Fusion, 2017, 57, 126039.	3.5	36
44	Linear gyrokinetic analysis of a DIII-D H-mode pedestal near the ideal ballooning threshold. Nuclear Fusion, 2012, 52, 103015.	3.5	35
45	Ion temperature gradient modes in noncircular tokamak geometry. Physics of Fluids B, 1992, 4, 3216-3225.	1.7	34
46	Resistive X-point modes in tokamak boundary plasmas. Physics of Plasmas, 2000, 7, 2290-2293.	1.9	34
47	Modelling of edge localised modes and edge localised mode control. Physics of Plasmas, 2015, 22, .	1.9	34
48	Impact of a large density gradient on linear and nonlinear edge-localized mode simulations. Nuclear Fusion, 2013, 53, 113020.	3.5	31
49	Impact of the pedestal plasma density on dynamics of edge localized mode crashes and energy loss scaling. Physics of Plasmas, 2014, 21, .	1.9	30
50	Simulation of Fusion Plasmas: Current Status and Future Direction. Plasma Science and Technology, 2007, 9, 312-387.	1.5	29
51	Flux-driven simulations of turbulence collapse. Physics of Plasmas, 2015, 22, 032505.	1.9	29
52	Divertor heat flux simulations in ELMy H-mode discharges of EAST. Nuclear Fusion, 2017, 57, 116016.	3.5	29
53	Edge turbulence and divertor heat flux width simulations of Alcator C-Mod discharges using an electromagnetic two-fluid model. Nuclear Fusion, 2017, 57, 116025.	3.5	27
54	Progress in Kinetic Simulation of Edge Plasmas. Contributions To Plasma Physics, 2008, 48, 212-223.	1.1	26

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55	Five-field simulations of peeling-ballooning modes using BOUT++ code. <i>Physics of Plasmas</i> , 2013, 20, .	1.9	26
56	Kinetic effects on particle and heat fluxes in detached plasmas. <i>Physics of Plasmas</i> , 1996, 3, 3386-3396.	1.9	25
57	Turbulence simulations of X point physics in the L-H transition*. <i>Nuclear Fusion</i> , 2002, 42, 21-27.	3.5	25
58	Progress towards high-performance, steady-state spherical torus. <i>Plasma Physics and Controlled Fusion</i> , 2003, 45, A335-A350.	2.1	25
59	Recent advances in long-pulse high-confinement plasma operations in Experimental Advanced Superconducting Tokamak. <i>Physics of Plasmas</i> , 2014, 21, 056107.	1.9	25
60	Magnetic configuration flexibility of snowflake divertor for HL-2M. <i>Fusion Engineering and Design</i> , 2014, 89, 2621-2627.	1.9	23
61	The physics mechanisms of the weakly coherent mode in the Alcator C-Mod Tokamak. <i>Physics of Plasmas</i> , 2016, 23, .	1.9	23
62	General Gyrokinetic Equations for Edge Plasmas. <i>Contributions To Plasma Physics</i> , 2006, 46, 477-489.	1.1	22
63	Theory and fluid simulations of boundary-plasma fluctuations. <i>Nuclear Fusion</i> , 2007, 47, 612-625.	3.5	22
64	Toward integrated multi-scale pedestal simulations including edge-localized-mode dynamics, evolution of edge-localized-mode cycles, and continuous fluctuations. <i>Physics of Plasmas</i> , 2016, 23, 055901.	1.9	22
65	Linear calculations of edge current driven kink modes with BOUT++ code. <i>Physics of Plasmas</i> , 2014, 21, .	1.9	21
66	Impact of $E \times B$ shear flow on low-n MHD instabilities. <i>Physics of Plasmas</i> , 2017, 24, 050704.	1.9	21
67	Machine learning surrogate models for Landau fluid closure. <i>Physics of Plasmas</i> , 2020, 27, .	1.9	21
68	Scrape-Off Layer Turbulence Theory. <i>Contributions To Plasma Physics</i> , 1994, 34, 232-246.	1.1	20
69	Drift reduced Landau fluid model for magnetized plasma turbulence simulations in BOUT++ framework. <i>Computer Physics Communications</i> , 2021, 267, 108079.	7.5	20
70	Application of Parallel Implicit Methods to Edge-Plasma Numerical Simulations. <i>Journal of Computational Physics</i> , 2002, 175, 249-268.	3.8	19
71	The impact of pedestal turbulence and electron inertia on edge-localized-mode crashes. <i>Physics of Plasmas</i> , 2014, 21, .	1.9	19
72	Investigations on the heat flux and impurity for the HL-2M divertor. <i>Nuclear Fusion</i> , 2016, 56, 126013.	3.5	19

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73	Self-consistent modeling of turbulence and transport. Journal of Computational Physics, 2003, 185, 399-426.	3.8	17
74	Progress towards modeling tokamak boundary plasma turbulence and understanding its role in setting divertor heat flux widths. Physics of Plasmas, 2018, 25, 055905.	1.9	17
75	Fluid simulations of conductingâ€wallâ€driven turbulence in boundary plasmas. Physics of Fluids B, 1993, 5, 3641-3650.	1.7	16
76	Electronâ€temperatureâ€gradientâ€driven instability in tokamak boundary plasma. Physics of Fluids B, 1993, 5, 2206-2214.	1.7	16
77	Self-consistent simulation of turbulence and transport in tokamak edge plasmas. Contributions To Plasma Physics, 2004, 44, 188-193.	1.1	16
78	Comparisons between tokamak fueling of gas puffing and supersonic molecular beam injection in 2D simulations. Physics of Plasmas, 2015, 22, 012503.	1.9	16
79	Calculation of two-dimension radial electric field in boundary plasmas by using BOUT++. Computer Physics Communications, 2018, 228, 69-82.	7.5	16
80	Impact of inward turbulence spreading on energy loss of edge-localized modes. Physics of Plasmas, 2015, 22, .	1.9	15
81	Impact of relative phase shift on inward turbulent spreading. Physics of Plasmas, 2015, 22, 010702.	1.9	15
82	Nonlinear Simulations of Peelingâ€Ballooning Modes with Parallel Velocity Perturbation. Contributions To Plasma Physics, 2012, 52, 353-359.	1.1	14
83	Experimental study of heating scheme effect on the inner divertor power footprint widths in EAST lower single null discharges. Plasma Physics and Controlled Fusion, 2018, 60, 045001.	2.1	14
84	Simulations of divertor heat flux width using transport code with cross-field drifts under the BOUT++ framework. AIP Advances, 2020, 10, .	1.3	14
85	Impact of plasma density/collisionality on divertor heat flux width. Nuclear Fusion, 2021, 61, 026005.	3.5	14
86	Dynamics of intrinsic axial flows in unsheared, uniform magnetic fields. Physics of Plasmas, 2016, 23, 052311.	1.9	13
87	Turbulence in the Divertor Region of Tokamak Edge Plasma. Contributions To Plasma Physics, 2004, 44, 182-187.	1.1	12
88	A high-order finite-volume algorithm for Fokkerâ€Planck collisions in magnetized plasmas. Journal of Computational Physics, 2008, 227, 7192-7205.	3.8	12
89	Neoclassical simulation of tokamak plasmas using the continuum gyrokinetic code TEMPEST. Physical Review E, 2008, 78, 016406.	2.1	12
90	Self-consistent simulation of transport and turbulence in tokamak edge plasma by coupling SOLPS-ITER and BOUT++. Physics of Plasmas, 2019, 26, .	1.9	12

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91	Deep learning surrogate model for kinetic Landau-fluid closure with collision. AIP Advances, 2020, 10, .	1.3	12
92	A model for a scrape-off-layer low- β high ($L-H$) mode transition. Physics of Plasmas, 1995, 2, 3374-3383.	1.9	11
93	Correlation of Density Pedestal Width and Neutral Penetration Length. Contributions To Plasma Physics, 2004, 44, 105-110.	1.1	11
94	Three dimensional nonlinear simulations of edge localized modes on the EAST tokamak using BOUT++ code. Physics of Plasmas, 2014, 21, 090705.	1.9	11
95	BOUT++ nonlinear simulation for a comparative study with the measured 2D ELM structures in the KSTAR H-mode plasma. Physics of Plasmas, 2019, 26, 052502.	1.9	11
96	A Landau-fluid closure for arbitrary frequency response. AIP Advances, 2019, 9, .	1.3	11
97	Achieving a robust grassy-ELM operation regime in CFETR. Nuclear Fusion, 2020, 60, 046014.	3.5	11
98	Effects of neutral gas collisions on the conducting-wall instability. Plasma Physics and Controlled Fusion, 1993, 35, 1071-1084.	2.1	10
99	Simulation of edge-plasma profiles and turbulence related to L-H transitions in tokamaks. Plasma Physics and Controlled Fusion, 2000, 42, A271-A276.	2.1	10
100	Suite of Verification Test Problems for Edge Turbulence Simulations. Contributions To Plasma Physics, 2008, 48, 27-31.	1.1	10
101	Ideal MHD stability and characteristics of edge localized modes on CFETR. Nuclear Fusion, 2018, 58, 016018.	3.5	10
102	Boundary plasma turbulence simulations for tokamaks. Communications in Computational Physics, 2014, . .	1.7	10
103	Benchmark studies of the gyro-Landau-fluid code and gyro-kinetic codes on kinetic ballooning modes. Physics of Plasmas, 2016, 23, 032119.	1.9	9
104	Edge localized mode characteristics and divertor heat flux during stationary and transient phase for CFETR hybrid scenario. Plasma Physics and Controlled Fusion, 2021, 63, 035006.	2.1	9
105	Kinetic Modelling of Detached and ELMy SOL Plasmas. Contributions To Plasma Physics, 1996, 36, 225-229.	1.1	8
106	Mitigating impact of thermal and rectified radio-frequency sheath potentials on edge localized modes. Physics of Plasmas, 2014, 21, 112302.	1.9	8
107	Advanced divertor concept design and analysis for HL-2M. Fusion Engineering and Design, 2016, 112, 450-459.	1.9	8
108	Unified theory of ballooning instabilities and temperature gradient-driven trapped ion modes. Physics of Fluids B, 1991, 3, 1807-1817.	1.7	7

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109	Fluid simulations of nonlocal dissipative drift-wave turbulence. <i>Physics of Plasmas</i> , 1995, 2, 686-701.	1.9	7
110	3D Fluid Simulations of Turbulence in Detached Scrape-off-Layer Plasmas. <i>Contributions To Plasma Physics</i> , 1996, 36, 202-206.	1.1	7
111	Overview of recent Alcator C-Mod research. <i>Nuclear Fusion</i> , 2003, 43, 1610-1618.	3.5	7
112	ELMy H-mode linear simulation with 3-field model on experimental advanced superconducting tokamak using BOUT++ <i>Physics of Plasmas</i> , 2012, 19, .	1.9	7
113	Quasi-coherent mode simulation during inter-ELM period in HL-2A. <i>Physics of Plasmas</i> , 2018, 25, 122510.	1.9	7
114	Extension of Landau-fluid closure to weakly collisional plasma regime. <i>Computer Physics Communications</i> , 2019, 236, 128-134.	7.5	7
115	Evidence of stochastic diffusion across a cross-field sheath due to Kelvin-Helmholtz vortices. <i>Physical Review A</i> , 1992, 45, 3949-3961.	2.5	6
116	Drift wave instability near a magnetic separatrix. <i>Physics of Plasmas</i> , 2002, 9, 1637-1645.	1.9	6
117	Analytical collisionless damping rate of geodesic acoustic mode. <i>Nuclear Fusion</i> , 2016, 56, 106008.	3.5	6
118	Calculation of the radial electric field with RF sheath boundary conditions in divertor geometry. <i>Nuclear Fusion</i> , 2018, 58, 026027.	3.5	6
119	Interplay between fluctuation driven toroidal axisymmetric flows and resistive ballooning mode turbulence. <i>Physics of Plasmas</i> , 2019, 26, .	1.9	6
120	Electromagnetic effect on geodesic acoustic mode with adiabatic electrons. <i>Physics of Plasmas</i> , 2019, 26, .	1.9	6
121	Effects of heating power on divertor in-out asymmetry and scrape-off layer flow in reversed field on Experimental Advanced Superconducting Tokamak. <i>Physics of Plasmas</i> , 2014, 21, 122514.	1.9	5
122	Effects of magnetic configuration on divertor power and particle deposition for long pulse operation in EAST. <i>Journal of Nuclear Materials</i> , 2015, 463, 528-532.	2.7	5
123	Excitation of zonal flow by nonlinear geodesic acoustic mode. <i>Physics of Plasmas</i> , 2020, 27, 034501.	1.9	5
124	Global geodesic acoustic mode in an ideal magnetohydrodynamic tokamak plasma. <i>Physics of Plasmas</i> , 2020, 27, 042504.	1.9	5
125	Tearing modes in tokamaks with lower hybrid current drive. <i>Physics of Fluids B</i> , 1991, 3, 363-371.	1.7	4
126	Parallelization of and Results from Kinetic Edge Plasma Code W1. <i>Contributions To Plasma Physics</i> , 1996, 36, 424-429.	1.1	4

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127	Fast pedestal, SOL and divertor measurements from DIII-D to validate BOUT++ nonlinear ELM simulations. <i>Journal of Nuclear Materials</i> , 2013, 438, S346-S350.	2.7	4
128	Numerical investigation on lithium transport in the edge plasma of EAST real-time- Li-injection experiments in the frame of BOUT++. <i>Nuclear Materials and Energy</i> , 2017, 12, 119-123.	1.3	4
129	Edge state selection by modulating E \times B shearing profile in toroidally confined plasmas. <i>Physics of Plasmas</i> , 2019, 26, 052508.	1.9	4
130	Fluid turbulence simulations of divertor heat load for ITER hybrid scenario using BOUT++. <i>Nuclear Fusion</i> , 2022, 62, 026024.	3.5	4
131	Linear analyses of peeling-ballooning modes in high beta pedestal plasmas. <i>Physics of Plasmas</i> , 2018, 25, 082106.	1.9	3
132	Asynchronous and Load-Balanced Union-Find for Distributed and Parallel Scientific Data Visualization and Analysis. <i>IEEE Transactions on Visualization and Computer Graphics</i> , 2021, 27, 2808-2820.	4.4	3
133	Edge-localized-mode simulation in CFETR steady-state scenario. <i>Nuclear Fusion</i> , 2022, 62, 016008.	3.5	3
134	Numerical modeling of pedestal stability and broadband turbulence of wide-pedestal QH-mode plasmas on DIII-D. <i>Nuclear Fusion</i> , 2022, 62, 076033.	3.5	3
135	Modeling of small tungsten dust grains in EAST tokamak with NDS-BOUT++. <i>Physics of Plasmas</i> , 2021, 28, .	1.9	3
136	Simulation study of particle transport by weakly coherent mode in the Alcator C-Mod tokamak. <i>Nuclear Fusion</i> , 2022, 62, 086018.	3.5	3
137	Impact of bootstrap current and Landau-fluid closure on ELM crashes and transport. <i>Physics of Plasmas</i> , 2018, 25, 050701.	1.9	2
138	Identification of Plasma Current Center by Neural Network Inference in EAST. <i>IEEE Transactions on Plasma Science</i> , 2020, 48, 54-60.	1.3	2
139	Simulations of heat fluxes in an ELMy H-mode discharge on HL-2A. <i>AIP Advances</i> , 2021, 11, 035334.	1.3	2
140	Impurity Migration Pattern Simulated by Test Particle Module Under BOUT++ Framework. <i>Communications in Computational Physics</i> , 2019, 26, 913-927.	1.7	2
141	Simulation of EAST edge plasma using SOLPS-ITER/BOUT++ coupling. <i>Nuclear Fusion</i> , 2020, 60, 106015.	3.5	2
142	Prediction of divertor heat flux width for ITER pre-fusion power operation using BOUT++ transport code. <i>Nuclear Fusion</i> , 2022, 62, 056003.	3.5	2
143	Publisher's Note: Neoclassical simulation of tokamak plasmas using the continuum gyrokinetic code TEMPEST [Phys. Rev. E78, 016406 (2008)]. <i>Physical Review E</i> , 2008, 78, .	2.1	1
144	Non-Ideal Ballooning Mode Instability with Real Electron Inertia. <i>Plasma and Fusion Research</i> , 2016, 11, 1203122-1203122.	0.7	1

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145	Tokamak Power Exhaust with the Snowflake Divertor: Present Results and Outstanding Issues. Journal of Fusion Energy, 2016, 35, 31-33.	1.2	1
146	Effect of Hyper-Resistivity on Nonlinear Tearing Modes. Chinese Physics Letters, 2018, 35, 065201.	3.3	1
147	Generalized slab universal instability and its appearance in pair plasma. Physics of Plasmas, 2020, 27, 102104.	1.9	1
148	Impact of equilibrium radial electric field on energy loss process after pedestal collapse. Contributions To Plasma Physics, 2020, 60, e201900158.	1.1	1
149	Modelling of nanometer scale dust grains in tokamak. Contributions To Plasma Physics, 2020, 60, e201900136.	1.1	1
150	Status and Plans for the National Spherical Torus Experimental Research Facility. IEEJ Transactions on Fundamentals and Materials, 2005, 125, 868-880.	0.2	1
151	Shaping Effects on Non-Ideal Ballooning Mode. Plasma and Fusion Research, 2018, 13, 3403086-3403086.	0.7	1
152	Kinetic Landau-fluid closures of non-Maxwellian distributions. Physics of Plasmas, 2022, 29, .	1.9	1
153	A new discovery of edge localized modes suppression using ICRH. Science China: Physics, Mechanics and Astronomy, 2022, 65, 1.	5.1	0