Xian-Zhu Tang

List of Publications by Year
in descending order

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92	2,180	257450 24	243625 44
papers	citations	h-index	g-index

93	93	93	2013
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Plasma simulation studies using multilevel physics models. Physics of Plasmas, 1999, 6, 1796-1803.	1.9	250
2	Multiphysics simulations. International Journal of High Performance Computing Applications, 2013, 27, 4-83.	3.7	244
3	Symbol sequence statistics in noisy chaotic signal reconstruction. Physical Review E, 1995, 51, 3871-3889.	2.1	91
4	Spherically Imploding Plasma Liners as a Standoff Driver for Magnetoinertial Fusion. IEEE Transactions on Plasma Science, 2012, 40, 1287-1298.	1.3	77
5	Finite time Lyapunov exponent and advection-diffusion equation. Physica D: Nonlinear Phenomena, 1996, 95, 283-305.	2.8	71
6	Electro-diffusion in a plasma with two ion species. Physics of Plasmas, 2012, 19, .	1.9	70
7	Thermo-diffusion in inertially confined plasmas. Physics Letters, Section A: General, Atomic and Solid State Physics, 2014, 378, 1531-1535.	2.1	66
8	Magnetic field generation in Rayleigh-Taylor unstable inertial confinement fusion plasmas. Physical Review Letters, 2012, 108, 165002.	7.8	61
9	Progress towards high performance plasmas in the National Spherical Torus Experiment (NSTX). Nuclear Fusion, 2005, 45, S168-S180.	3.5	60
10	Overview of physics results from the conclusive operation of the National Spherical Torus Experiment. Nuclear Fusion, 2013, 53, 104007.	3.5	53
11	Orbital-motion-limited theory of dust charging and plasma response. Physics of Plasmas, 2014, 21, .	1.9	51
12	Charging and Heat Collection by a Positively Charged Dust Grain in a Plasma. Physical Review Letters, 2014, 113, 035002.	7.8	50
13	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
14	The mitigating effect of magnetic fields on Rayleigh-Taylor unstable inertial confinement fusion plasmas. Physics of Plasmas, 2013, 20, .	1.9	43
15	Overview of results from the National Spherical Torus Experiment (NSTX). Nuclear Fusion, 2009, 49, 104016.	3.5	41
16	Overview of recent physics results from the National Spherical Torus Experiment (NSTX). Nuclear Fusion, 2007, 47, S645-S657.	3.5	40
17	Mechanism for magnetic field generation and growth in Rayleigh-Taylor unstable inertial confinement fusion plasmas. Physics of Plasmas, 2012, 19, 082703.	1.9	39
18	Reflection and implantation of low energy helium with tungsten surfaces. Journal of Nuclear Materials, 2014, 447, 254-270.	2.7	39

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19	Symbol statistics and spatio-temporal systems. Physica D: Nonlinear Phenomena, 1997, 102, 253-261.	2.8	37
20	Coupled motion of grain boundaries in bcc tungsten as a possible radiation-damage healing mechanism under fusion reactor conditions. Nuclear Fusion, 2013, 53, 063001.	3.5	36
21	The SEL macroscopic modeling code. Computer Physics Communications, 2004, 164, 237-243.	7.5	33
22	Scaling of the plasma sheath in a magnetic field parallel to the wall. Physics of Plasmas, 2010, 17, .	1.9	27
23	Progress towards high-performance, steady-state spherical torus. Plasma Physics and Controlled Fusion, 2003, 45, A335-A350.	2.1	25
24	Current drive by coaxial helicity injection in a spherical torus. Physics of Plasmas, 2004, 11, 2679-2687.	1.9	24
25	Survivability of dust in tokamaks: Dust transport in the divertor sheath. Physics of Plasmas, 2014, 21, 022502.	1.9	24
26	Comparison of dust charging between orbital-motion-limited theory and particle-in-cell simulations. Physics of Plasmas, 2015, 22, .	1.9	23
27	Control of runaway electron energy using externally injected whistler waves. Physics of Plasmas, 2018, 25, .	1.9	22
28	Observation of interspecies ion separation in inertial-confinement-fusion implosions. Europhysics Letters, 2016, 115, 65001.	2.0	21
29	Phase-space dynamics of runaway electrons in magnetic fields. Plasma Physics and Controlled Fusion, 2017, 59, 044003.	2.1	20
30	Reconstruction of chaotic signals using symbolic data. Physics Letters, Section A: General, Atomic and Solid State Physics, 1994, 190, 393-398.	2.1	18
31	Force-Free Magnetic Relaxation in Driven Plasmas. Physical Review Letters, 2005, 94, 225004.	7.8	18
32	Turbulence-Driven Bootstrap Current in Low-Collisionality Tokamaks. Physical Review Letters, 2013, 111, 205002.	7.8	18
33	Reduced Fokker-Planck models for fast particle distribution across a transition layer of disparate plasma temperatures. Physics of Plasmas, 2014, 21, 032707.	1.9	17
34	Kinetic model for the collisionless sheath of a collisional plasma. Physics of Plasmas, 2016, 23, .	1.9	17
35	Neural network representability of fully ionized plasma fluid model closures. Physics of Plasmas, 2020, 27, 072106.	1.9	16
36	Studies of spherical tori, stellarators and anisotropic pressure with the M3D code. Nuclear Fusion, 2001, 41, 739-746.	3.5	15

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37	Sheath energy transmission in a collisional plasma with collisionless sheath. Physics of Plasmas, 2015, 22, 100703.	1.9	15
38	Critical role of electron heat flux on Bohm criterion. Physics of Plasmas, 2016, 23, .	1.9	15
39	Influence of point defects on grain boundary mobility in bcc tungsten. Journal of Physics Condensed Matter, 2013, 25, 035402.	1.8	14
40	Avalanche mechanism for runaway electron amplification in a tokamak plasma. Plasma Physics and Controlled Fusion, 2019, 61, 054008.	2.1	14
41	Mitigating hydrodynamic mix at the gas-ice interface with a combination of magnetic, ablative, and viscous stabilization. Europhysics Letters, 2014, 107, 65001.	2.0	13
42	Ambipolar Transport via Trapped-Electron Whistler Instability Along Open Magnetic Field Lines. Physical Review Letters, 2012, 109, 135005.	7.8	12
43	A hybrid model for coupling kinetic corrections of fusion reactivity to hydrodynamic implosion simulations. Physics of Plasmas, 2014, 21, 032706.	1.9	12
44	A comparative study of the tail ion distribution with reduced Fokkerâ€“Planck models. Physics of Plasmas, 2014, 21, 032708.	1.9	12
45	Numerical studies of a steady state axisymmetric co-axial helicity injection plasma. Physics of Plasmas, 2004, 11, 171-185.	1.9	11
46	Chandrasekhar-Kendall modes and Taylor relaxation in an axisymmetric torus. Physics of Plasmas, 2005, 12, 102102.	1.9	11
47	Fusion yield rate recovery by escaping hot-spot fast ions in the neighboring fuel layer. Europhysics Letters, 2014, 105, 32001.	2.0	11
48	Anisotropies in magnetic field evolution and local Lyapunov exponents. Physics of Plasmas, 2000, 7, 1113-1124.	1.9	10
49	Parallel Heat Flux from Low to High Parallel Temperature along a Magnetic Field Line. Physical Review Letters, 2012, 108, 165005.	7.8	10
50	Thermodynamic evaluation of mass diffusion in ionic mixtures. Physics of Plasmas, 2014, 21, 022708.	1.9	10
51	Relation of the runaway avalanche threshold to momentum space topology. Plasma Physics and Controlled Fusion, 2018, 60, 024004.	2.1	10
52	An adaptive scalable fully implicit algorithm based on stabilized finite element for reduced visco-resistive MHD. Journal of Computational Physics, 2022, 454, 110967.	3.8	10
53	Hamiltonian structure of Hamiltonian chaos. Physics Letters, Section A: General, Atomic and Solid State Physics, 1997, 236, 476-482.	2.1	9
54	Turbulent current drive mechanisms. Physics of Plasmas, 2017, 24, .	1.9	9

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55	Bohm Criterion of Plasma Sheaths away from Asymptotic Limits. Physical Review Letters, 2022, 128, 085002.	7.8	9
56	Equilibrium and resistive steady state of an axisymmetric co-axial helicity injection plasma. Physics of Plasmas, 2003, 10, 3661-3673.	1.9	8
57	Dust Divertor for a Tokamak Fusion Reactor. Journal of Fusion Energy, 2010, 29, 407-411.	1.2	8
58	Parallel transport of long mean-free-path plasmas along open magnetic field lines: Plasma profile variation. Physics of Plasmas, 2012, 19, .	1.9	8
59	Parallel transport of long mean-free-path plasma along open magnetic field lines: Parallel heat flux. Physics of Plasmas, 2012, 19, 062501.	1.9	8
60	Parallel heat flux and flow acceleration in open field line plasmas with magnetic trapping. Physics of Plasmas, 2014, 21, .	1.9	8
61	Role of hydrodynamic instability growth in hot-spot mass gain and fusion performance of inertial confinement fusion implosions. Physics of Plasmas, 2014, 21, 102704.	1.9	8
62	Runaway electron generation in axisymmetric tokamak geometry. Europhysics Letters, 2019, 127, 45001.	2.0	8
63	Equilibrium properties of the plasma sheath with a magnetic field parallel to the wall. Physics of Plasmas, 2010, 17, .	1.9	7
64	Models of primary runaway electron distribution in the runaway vortex regime. Physics of Plasmas, 2017, 24, 112508.	1.9	7
65	Spatial transport of runaway electrons in axisymmetric tokamak plasmas. Plasma Physics and Controlled Fusion, 2019, 61, 024004.	2.1	7
66	Collisionless plasma transport mechanisms in stochastic open magnetic field lines in tokamaks. Nuclear Fusion, 2021, 61, 126036.	3.5	7
67	An Adaptive Discontinuous Petrov–Galerkin Method for the Grad–Shafranov Equation. SIAM Journal of Scientific Computing, 2020, 42, B1227-B1249.	2.8	6
68	Impact of a minority relativistic electron tail interacting with a thermal plasma containing high-atomic-number impurities. Physics of Plasmas, 2020, 27, 040702.	1.9	6
69	Selfâ€Organization of Radio Lobe Magnetic Fields by Driven Relaxation. Astrophysical Journal, 2008, 679, 1000-1017.	4.5	6
70	Constrained Resonance in Magnetic Self-Organization. Physical Review Letters, 2005, 95, 155002.	7.8	5
71	Proposed Experiment to Study Relaxation Formation of a Spherical Tokamak with a Plasma Center Column. Journal of Fusion Energy, 2007, 26, 85-90.	1.2	5
72	Bounce-free spherical hydrodynamic implosion. Physics of Plasmas, 2011, 18, 120702.	1.9	5

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73	Calculation of the fast ion tail distribution for a spherically symmetric hot spot. Physics of Plasmas, 2014, 21, 102705.	1.9	5
74	Scale-up of spherical tokamak solenoid-free startup by coaxial helicity injection. Physics of Plasmas, 2007, 14, 100704.	1.9	4
75	Anomalous scaling behavior in Takens-Bogdanov bifurcations. Physics Letters, Section A: General, Atomic and Solid State Physics, 1998, 242, 239-244.	2.1	3
76	Compact toroids with AlfvÃ©nic flows. Physics of Plasmas, 2004, 11, 3502-3509.	1.9	3
77	A quasilinear formulation of turbulence driven current. Physics of Plasmas, 2014, 21, 022310.	1.9	3
78	Fast ion transport at a gas-metal interface. Physics of Plasmas, 2017, 24, 112702.	1.9	3
79	Takens-Bogdanov random walks. Physical Review E, 1998, 57, 3749-3756.	2.1	2
80	Bohm criterion and plasma particle/power exhaust to and recycling at the wall. Nuclear Materials and Energy, 2017, 12, 1342-1347.	1.3	2
81	Diffusive tunneling of Gamow fuel ions in a mixture of fusion fuel and inert pusher. Europhysics Letters, 2018, 123, 65002.	2.0	2
82	Yield reduction via the Knudsen layer effect in a mixture of fuel and pusher material. Plasma Physics and Controlled Fusion, 2019, 61, 025005.	2.1	2
83	A Parallel Cut-Cell Algorithm for the Free-Boundary Grad--Shafranov Problem. SIAM Journal of Scientific Computing, 2021, 43, B1198-B1225.	2.8	2
84	Understanding how minority relativistic electron populations may dominate charge state balance and radiative cooling of a post-thermal quench tokamak plasma. Physics of Plasmas, 2022, 29, 012504.	1.9	2
85	Anisotropic angular scattering models of elastic electron-neutral collisions for Monte Carlo plasma simulations. Plasma Sources Science and Technology, 2022, 31, 065013.	3.1	2
86	Equilibrium properties of the plasma sheath with a magnetic field parallel to the wall. Journal of Nuclear Materials, 2011, 415, S187-S191.	2.7	1
87	Numerical computation of the helical Chandrasekharâ€“Kendall modes. Journal of Computational Physics, 2011, 230, 907-919.	3.8	1
88	Plasma Power Recycling at the Divertor Surface. Fusion Science and Technology, 2017, 71, 110-121.	1.1	1
89	Toroidal effect on runaway vortex and avalanche growth rate. Physics of Plasmas, 2019, 26, 082503.	1.9	1
90	Status and Plans for the National Spherical Torus Experimental Research Facility. IEEJ Transactions on Fundamentals and Materials, 2005, 125, 868-880.	0.2	1

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91	Plasma physics effects on thermonuclear burn rate in the presence of hydrodynamic mix. Journal of Physics: Conference Series, 2016, 688, 012123.	0.4	0
92	Diffusive tunneling in an isobaric but non-isothermal fuel-pusher mixture. Physics of Plasmas, 2019, 26, 012711.	1.9	0