Tomo-Hiko Watanabe

List of Publications by Year
in descending order

126 papers	2,897 citations	159585 30 h-index	197818 49 g-index
131 all docs	131 docs citations	131 times ranked	1301 citing authors

#	Article	IF	Citations
1	Collisionless damping of zonal flows in helical systems. Physics of Plasmas, 2006, 13, 012501.	1.9	188
2	Velocity–space structures of distribution function in toroidal ion temperature gradient turbulence. Nuclear Fusion, 2006, 46, 24-32.	3.5	183
3	Collisionless damping of geodesic acoustic modes. Journal of Plasma Physics, 2006, 72, 825.	2.1	129
4	Extension of the operational regime of the LHD towards a deuterium experiment. Nuclear Fusion, 2017, 57, 102023.	3.5	116
5	Linearized model collision operators for multiple ion species plasmas and gyrokinetic entropy balance equations. Physics of Plasmas, 2009, 16, 112503.	1.9	95
6	Cross-Scale Interactions between Electron and Ion Scale Turbulence in a Tokamak Plasma. Physical Review Letters, 2015, 114, 255002.	7.8	90
7	Reduction of Turbulent Transport with Zonal Flows Enhanced in Helical Systems. Physical Review Letters, 2008, 100, 195002.	7.8	89
8	Dynamics of Zonal Flows in Helical Systems. Physical Review Letters, 2005, 94, 115001.	7.8	82
9	Isotope Effects on Trapped-Electron-Mode Driven Turbulence and Zonal Flows in Helical and Tokamak Plasmas. Physical Review Letters, 2017, 118, 165002.	7.8	82
10	Kinetic simulation of steady states of ion temperature gradient driven turbulence with weak collisionality. Physics of Plasmas, 2004, 11, 1476-1483.	1.9	80
11	Magnetohydrodynamic Vlasov simulation of the toroidal Alfvén eigenmode. Physics of Plasmas, 1995, 2, 2711-2716.	1.9	69
12	Nonlinear entropy transfer via zonal flows in gyrokinetic plasma turbulence. Physics of Plasmas, 2012, 19, .	1.9	56
13	Gyrokinetic turbulent transport simulation of a high ion temperature plasma in large helical device experiment. Physics of Plasmas, 2012, 19, .	1.9	54
14	Gyrokinetic simulation of zonal flows and ion temperature gradient turbulence in helical systems. Nuclear Fusion, 2007, 47, 1383-1390.	3.5	49
15	Kinetic simulation of a quasisteady state in collisionless ion temperature gradient driven turbulence. Physics of Plasmas, 2002, 9, 3659-3662.	1.9	47
16	Collisionless kinetic-fluid closure and its application to the three-mode ion temperature gradient driven system. Physics of Plasmas, 2001, 8, 2617-2628.	1.9	43
17	Benchmark test of drift-kinetic and gyrokinetic codes through neoclassical transport simulations. Computer Physics Communications, 2010, 181, 1069-1076.	7.5	40
18	A reduced model for ion temperature gradient turbulent transport in helical plasmas. Physics of Plasmas, 2013, 20, .	1.9	40

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19	Comprehensive simulation study on local and global development of auroral arcs and field‐aligned potentials. Journal of Geophysical Research, 1993, 98, 21391-21407.	3.3	39
20	Collisionless kinetic-fluid model of zonal flows in toroidal plasmas. Physics of Plasmas, 2007, 14, 022502.	1.9	37
21	Gyrokinetic Vlasov Code Including Full Three-dimensional Geometry of Experiments. Plasma and Fusion Research, 2010, 5, 016-016.	0.7	37
22	Relaxed States of a Magnetized Plasma with Minimum Dissipation. Physical Review Letters, 1998, 81, 3144-3147.	7.8	35
23	Zonal flows and ion temperature gradient instabilities in multiple-helicity magnetic fields. Physics of Plasmas, 2007, 14, 122505.	1.9	35
24	Zonal Flow Dynamics and Control of Turbulent Transport in Stellarators. Physical Review Letters, 2011, 107, 245002.	7.8	35
25	Quasilinear carbon transport in an impurity hole plasma in LHD. Physics of Plasmas, 2014, 21, .	1.9	35
26	Effects of equilibrium-scale radial electric fields on zonal flows and turbulence in helical configurations. Nuclear Fusion, 2011, 51, 123003.	3.5	34
27	Linear Gyrokinetic Analyses of ITG Modes and Zonal Flows in LHD with High Ion Temperature. Plasma and Fusion Research, 2011, 6, 1403001-1403001.	0.7	34
28	Turbulence-driven zonal flows in helical systems with radial electric fields. Physics of Plasmas, 2009, 16, 056101.	1.9	33
29	Electromagnetic gyrokinetic simulation of turbulence in torus plasmas. Journal of Plasma Physics, 2015, 81, .	2.1	32
30	Quiescent Discrete Auroral Arcs: A Review of Magnetospheric Generator Mechanisms. Space Science Reviews, 2020, 216, 1.	8.1	31
31	Comparison between kinetic and fluid simulations of slab ion temperature gradient driven turbulence. Physics of Plasmas, 2003, 10, 726-736.	1.9	30
32	Suppression of Ion-Scale Microtearing Modes by Electron-Scale Turbulence via Cross-Scale Nonlinear Interactions in Tokamak Plasmas. Physical Review Letters, 2017, 119, 195002.	7.8	30
33	Kinetic simulations of turbulent fusion plasmas. Comptes Rendus Physique, 2006, 7, 650-669.	0.9	29
34	Gyrokinetic turbulence simulations of high-beta tokamak and helical plasmas with full-kinetic and hybrid models. Nuclear Fusion, 2013, 53, 053007.	3.5	27
35	Validation studies of gyrokinetic ITG and TEM turbulence simulations in a JT-60U tokamak using multiple flux matching. Nuclear Fusion, 2016, 56, 086010.	3.5	27
36	Impact of hydrogen isotope species on microinstabilities in helical plasmas. Plasma Physics and Controlled Fusion, 2016, 58, 074008.	2.1	25

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37	Feedback instability in the magnetosphere-ionosphere coupling system: Revisited. Physics of Plasmas, 2010, 17, 022904.	1.9	24
38	Numerical techniques for parallel dynamics in electromagnetic gyrokinetic Vlasov simulations. Computer Physics Communications, 2013, 184, 2462-2473.	7.5	23
39	Communication-overlap techniques for improved strong scaling of gyrokinetic Eulerian code beyond 100k cores on the K-computer. International Journal of High Performance Computing Applications, 2014, 28, 73-86.	3.7	23
40	Improved collision operator for plasma kinetic simulations with multi-species ions and electrons. Computer Physics Communications, 2015, 197, 61-72.	7.5	23
41	Turbulent transport of heat and particles in a high ion temperature discharge of the Large Helical Device. Nuclear Fusion, 2015, 55, 043024.	3.5	22
42	Electromagnetic gyrokinetic turbulence in finite-beta helical plasmas. Physics of Plasmas, 2014, 21, 055905.	1.9	20
43	Simulation studies on the GAM oscillation and damping in helical configurations. Nuclear Fusion, 2007, 47, 1258-1264.	3.5	19
44	A Nondissipative Simulation Method for the Drift Kinetic Equation. Journal of the Physical Society of Japan, 2001, 70, 3565-3576.	1.6	17
45	Local Gyrokinetic Vlasov Simulations with Realistic Tokamak MHD Equilibria. Plasma and Fusion Research, 2014, 9, 1403029-1403029.	0.7	17
46	Cross-scale interactions between turbulence driven by electron and ion temperature gradients via sub-ion-scale structures. Nuclear Fusion, 2017, 57, 066036.	3.5	17
47	Persistence of Ion Temperature Gradient Turbulent Transport at Finite Normalized Pressure. Physical Review Letters, 2019, 123, 025003.	7.8	16
48	Fokker-Planck simulation study of Alfvén eigenmode bursts. Nuclear Fusion, 2001, 41, 1153-1159.	3.5	15
49	Comparison between kinetic-ballooning-mode-driven turbulence and ion-temperature-gradient-driven turbulence. Physics of Plasmas, 2014, 21, 052301.	1.9	15
50	Multi-machine analysis of turbulent transport in helical systems via gyrokinetic simulation. Nuclear Fusion, 2017, 57, 066010.	3.5	15
51	Improved linearized model collision operator for the highly collisional regime. Physics of Plasmas, 2019, 26, .	1.9	15
52	Gyrokinetic Studies of Ion Temperature Gradient Turbulence and Zonal Flows in Helical Systems. Plasma and Fusion Research, 2008, 3, 041-041.	0.7	15
53	Magnetohydrodynamic simulation on co- and counter-helicity merging of spheromaks and driven magnetic reconnection. Physics of Plasmas, 1997, 4, 1297-1307.	1.9	14
54	Non-linear simulations of internal reconnection events in spherical tokamaks. Nuclear Fusion, 2000, 40, 721-726.	3.5	14

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55	Feedback instability analysis for dipole configuration with ionospheric and magnetospheric cavities. Journal of Geophysical Research, 2011, 116, n/a-n/a.	3.3	14
56	A unified model of auroral arc growth and electron acceleration in the magnetosphere–ionosphere coupling. Geophysical Research Letters, 2014, 41, 6071-6077.	4.0	14
57	Multi-scale turbulence simulation suggesting improvement of electron heated plasma confinement. Nature Communications, 2022, 13, .	12.8	14
58	Nondissipative kinetic simulation and analytical solution of three-mode equations of the ion temperature gradient instability. Physics of Plasmas, 2000, 7, 984-990.	1.9	13
59	Development of Linearized Collision Operator for Multiple Ion Species in Gyrokinetic Flux-Tube Simulations. Plasma and Fusion Research, 2015, 10, 1403058-1403058.	0.7	13
60	Three dimensional simulation study of spheromak injection into magnetized plasmas. Nuclear Fusion, 2000, 40, 277-288.	3.5	12
61	Vlasov and Drift Kinetic Simulation Methods Based on the Symplectic Integrator. Transport Theory and Statistical Physics, 2005, 34, 287-309.	0.4	12
62	Effects of collisions on conservation laws in gyrokinetic field theory. Physics of Plasmas, 2015, 22, .	1.9	12
63	Quasisymmetric toroidal plasmas with large mean flows. Physics of Plasmas, 2011, 18, 082505.	1.9	11
64	Hybrid Alfvén resonant mode generation in the magnetosphere-ionosphere coupling system. Physics of Plasmas, 2012, 19, .	1.9	11
65	Improved strong scaling of a spectral/finite difference gyrokinetic code for multi-scale plasma turbulence. Parallel Computing, 2015, 49, 1-12.	2.1	11
66	Integrated modelling and multiscale gyrokinetic validation study of ETG turbulence in a JET hybrid H-mode scenario. Nuclear Fusion, 2022, 62, 086025.	3.5	11
67	Study of electromagnetic microinstabilities in helical systems with the stellarator expansion method. Physics of Plasmas, 2004, 11, 3068-3077.	1.9	10
68	Conservation of energy and momentum in nonrelativistic plasmas. Physics of Plasmas, 2013, 20, .	1.9	10
69	Reversible collisionless magnetic reconnection. Physics of Plasmas, 2013, 20, 102116.	1.9	10
70	Generation of auroral turbulence through the magnetosphere–ionosphere coupling. New Journal of Physics, 2016, 18, 125010.	2.9	10
71	Conservation laws for collisional and turbulent transport processes in toroidal plasmas with large mean flows. Physics of Plasmas, 2017, 24, 020701.	1.9	10
72	Small-Scale Dynamic Aurora. Space Science Reviews, 2021, 217, 17.	8.1	10

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73	Regulation of electron temperature gradient turbulence by zonal flows driven by trapped electron modes. Physics of Plasmas, 2014, 21, 052306.	1.9	9
74	Quiet, Discrete Auroral Arcs: Acceleration Mechanisms. Space Science Reviews, 2020, 216, 1.	8.1	9
75	Competing Processes of Electrostatic Plasma Waves Excited by Auroral Electron Beams: Comparison of EXOS D Observation Results With Computer Simulations. Journal of Geophysical Research, 1993, 98, 15621-15630.	3.3	8
76	Spatiotemporal dynamics and transport reduction in helical magnetic configuration. Physics of Plasmas, 2009, 16, 092306.	1.9	8
77	Enhancement of Residual Zonal Flows in Helical Systems with Equilibrium Radial Electric Fields. Contributions To Plasma Physics, 2010, 50, 571-575.	1.1	8
78	How to apply a turbulent transport model based on a gyrokinetic simulation for the ion temperature gradient mode in helical plasmas. Journal of Physics: Conference Series, 2014, 561, 012020.	0.4	8
79	Flux tube train model for local turbulence simulation of toroidal plasmas. Physics of Plasmas, 2015, 22, .	1.9	8
80	Computation-Communication Overlap Techniques for Parallel Spectral Calculations in Gyrokinetic Vlasov Simulations. Plasma and Fusion Research, 2013, 8, 1403150-1403150.	0.7	8
81	Formation of coherent vortex streets and transport reduction in electron temperature gradient driven turbulence. Physics of Plasmas, 2010, 17, 042306.	1.9	7
82	A Reduced Transport Model for Ion Heat Diffusivity by Gyro-Kinetic Analysis with Kinetic Electrons in Helical Plasmas. Plasma and Fusion Research, 2017, 12, 1303035-1303035.	0.7	7
83	Unstable Eigenmodes of the Feedback Instability With Collision‐Induced Velocity Shear. Geophysical Research Letters, 2018, 45, 10,043.	4.0	7
84	Eulerian variational formulations and momentum conservation laws for kinetic plasma systems. Physics of Plasmas, 2018, 25, 102506.	1.9	7
85	Modeling of turbulent particle and heat transport in helical plasmas based on gyrokinetic analysis. Physics of Plasmas, 2019, 26, 012510.	1.9	7
86	Modeling of magnetic island formation in magnetic reconnection experiment. Physics of Plasmas, 1999, 6, 1253-1257.	1.9	6
87	Effects of time-varying E×B flow on slab ion-temperature-gradient turbulence. Physics of Plasmas, 2010, 17, .	1.9	6
88	A hybrid method of semi-Lagrangian and additive semi-implicit Runge–Kutta schemes for gyrokinetic Vlasov simulations. Computer Physics Communications, 2012, 183, 1986-1992.	7.5	6
89	Kinetic stabilization of tilt disruption in field reversed configurations. Nuclear Fusion, 1999, 39, 2083-2087.	3.5	5
90	Gyrokinetic Simulations of Slab Ion Temperature Gradient Turbulence with Kinetic Electrons. Plasma and Fusion Research, 2011, 6, 2403087-2403087.	0.7	5

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91	Extended gyrokinetic field theory for time-dependent magnetic confinement fields. Physics of Plasmas, 2014, 21, 012515.	1.9	5
92	Implementation of a gyrokinetic collision operator with an implicit time integration scheme and its computational performance. Computer Physics Communications, 2019, 235, 9-15.	7.5	5
93	Extracting and Modeling the Effects of Small-Scale Fluctuations on Large-Scale Fluctuations by Mori–Zwanzig Projection Operator Method. Journal of the Physical Society of Japan, 2020, 89, 024401.	1.6	5
94	Effects of ion polarization and finite-β on heat transport in slab electron-temperature-gradient driven turbulence. Physics of Plasmas, 2021, 28, .	1.9	5
95	Transport Simulation for Helical Plasmas by use of Gyrokinetic Transport Model. Plasma and Fusion Research, 2019, 14, 3403061-3403061.	0.7	5
96	Formation of a Field-Reversed Configuration by Coalescence of Spheromaks. Fusion Science and Technology, 1995, 27, 374-377.	0.6	4
97	Drift Wave Turbulence. AIP Conference Proceedings, 2008, , .	0.4	4
98	Verification of gyrokinetic microstability codes with an LHD configuration. Physics of Plasmas, 2014, 21, 112305.	1.9	4
99	Kinetic Simulations of Neoclassical and Anomalous Transport Processes in Helical Systems. Plasma and Fusion Research, 2012, 7, 2403094-2403094.	0.7	4
100	Mechanical Properties of TiN Films with the Preferred Orientations by Nano-Indentation Method. Zairyo/Journal of the Society of Materials Science, Japan, 2000, 49, 180-185.	0.2	4
101	Effects of parallel dynamics on vortex structures in electron temperature gradient driven turbulence. Physics of Plasmas, 2011, 18, 012303.	1.9	3
102	Feedback and Ballooning Instabilities in the Magnetosphere–Ionosphere Coupling. Geophysical Research Letters, 2020, 47, e2020GL088233.	4.0	3
103	Relation among ITG Turbulence, Zonal Flows, and Transport in Helical Plasmas. Plasma and Fusion Research, 2013, 8, 1203019-1203019.	0.7	3
104	Correlation between zonal flow shearing and entropy transfer rates in toroidal ion temperature gradient turbulence. Physics of Plasmas, 2019, 26, 082304.	1.9	2
105	Moment extract method for drift kinetic simulation of magnetized plasma. Journal of Computational Physics, 2021, 432, 110167.	3.8	2
106	Vlasov Simulation of the Microturbulence. Journal of Plasma and Fusion Research, 2005, 81, 686-697.	0.4	2
107	Anomalous tungsten transport driven by ion temperature gradient turbulence. Nuclear Fusion, 2022, 62, 064003.	3.5	2
108	Implementation of an Electrostatic Implicit Particle Simulation Scheme. Journal of Computational Physics, 1996, 127, 473-481.	3.8	1

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109	Simulations of Zonal Flow Damping and Electron Bernstein Waves in Helical Systems. AIP Conference Proceedings, 2006, , .	0.4	1
110	Simulation science for fusion plasmas. Journal of Physics: Conference Series, 2008, 133, 012025.	0.4	1
111	Exploring phase space turbulence in magnetic fusion plasmas. Journal of Physics: Conference Series, 2014, 510, 012045.	0.4	1
112	Nonlinear Entropy Transfer in ETG-TEM Turbulence via TEM Driven Zonal Flows. Plasma and Fusion Research, 2015, 10, 1403047-1403047.	0.7	1
113	A Numerical Method for Parallel Particle Motions in Gyrokinetic Vlasov Simulations. Plasma and Fusion Research, 2011, 6, 2401028-2401028.	0.7	1
114	Kinetic Ballooning Mode Turbulence Simulation based on Electromagnetic Gyrokinetics. Plasma and Fusion Research, 2014, 9, 1203020-1203020.	0.7	1
115	Microturbulence Simulation 1.What’s the Microturbulence Simulation?. Journal of Plasma and Fusion Research, 2005, 81, 534-546.	0.4	1
116	Impulsive Alfven Coupling between the Fully-Ionized Plasma and the Weakly-Ionized Plasma. Journal of the Physical Society of Japan, 1995, 64, 124-135.	1.6	1
117	Two Dimensional MHD Simulation of Merging Plasmas in Laboratory Experiments - Focussing on its Dynamic Behaviours. Journal of Plasma and Fusion Research, 1999, 75-CD, 157-167.	0.4	0
118	Gyrokinetic-Vlasov simulations of the ion temperature gradient turbulence in tokamak and helical systems. AIP Conference Proceedings, 2006, , .	0.4	0
119	Gyrokinetic and Gyrofluid Models for Zonal Flow Dynamics in Ion and Electron Temperature Gradient Turbulence. AIP Conference Proceedings, 2006, , .	0.4	0
120	Level-crossing function in the analysis of edge plasma turbulence. Nuclear Fusion, 2009, 49, 095016.	3.5	0
121	Microinstabilities, Turbulent Transport, and Structure Formation in Helical Plasmas. Fusion Science and Technology, 2010, 58, 256-268.	1.1	0
122	Characterization of turbulence and transport in magnetic confinement devices. , 2012, , .		0
123	Benchmark of Electromagnetic Gyrokinetic Codes in High Performance Fusion Plasma. Plasma and Fusion Research, 2016, 11, 2403011-2403011.	0.7	0
124	Prospects of Microturbulence Simulation. Journal of Plasma and Fusion Research, 2005, 81, 698-702.	0.4	0
125	Structure of the Electron Distribution Function and Induced Beam Instability in Collisionless Magnetic Reconnection with a Strong Guide Field. Plasma and Fusion Research, 2020, 15, 1401084-1401084.	0.7	0
126	Challenges of ab initio simulations to physics of burning plasma confinement. Atomos, 2022, 64, 152-156.	0.0	0