

# Tomo-Hiko Watanabe

## List of Publications by Year in descending order

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126  
papers

2,897  
citations

159585

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197818

49  
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131  
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131  
docs citations

131  
times ranked

1301  
citing authors

#	ARTICLE	IF	CITATIONS
1	Challenges of ab initio simulations to physics of burning plasma confinement. <i>Atomos</i> , 2022, 64, 152-156.	0.0	0
2	Anomalous tungsten transport driven by ion temperature gradient turbulence. <i>Nuclear Fusion</i> , 2022, 62, 064003.	3.5	2
3	Integrated modelling and multiscale gyrokinetic validation study of ETG turbulence in a JET hybrid H-mode scenario. <i>Nuclear Fusion</i> , 2022, 62, 086025.	3.5	11
4	Multi-scale turbulence simulation suggesting improvement of electron heated plasma confinement. <i>Nature Communications</i> , 2022, 13, .	12.8	14
5	Small-Scale Dynamic Aurora. <i>Space Science Reviews</i> , 2021, 217, 17.	8.1	10
6	Moment extract method for drift kinetic simulation of magnetized plasma. <i>Journal of Computational Physics</i> , 2021, 432, 110167.	3.8	2
7	Effects of ion polarization and finite- $\beta^2$ on heat transport in slab electron-temperature-gradient driven turbulence. <i>Physics of Plasmas</i> , 2021, 28, .	1.9	5
8	Quiescent Discrete Auroral Arcs: A Review of Magnetospheric Generator Mechanisms. <i>Space Science Reviews</i> , 2020, 216, 1.	8.1	31
9	Quiet, Discrete Auroral Arcs: Acceleration Mechanisms. <i>Space Science Reviews</i> , 2020, 216, 1.	8.1	9
10	Feedback and Ballooning Instabilities in the Magnetosphere-Ionosphere Coupling. <i>Geophysical Research Letters</i> , 2020, 47, e2020GL088233.	4.0	3
11	Extracting and Modeling the Effects of Small-Scale Fluctuations on Large-Scale Fluctuations by Mori's Zwanzig Projection Operator Method. <i>Journal of the Physical Society of Japan</i> , 2020, 89, 024401.	1.6	5
12	Structure of the Electron Distribution Function and Induced Beam Instability in Collisionless Magnetic Reconnection with a Strong Guide Field. <i>Plasma and Fusion Research</i> , 2020, 15, 1401084-1401084.	0.7	0
13	Implementation of a gyrokinetic collision operator with an implicit time integration scheme and its computational performance. <i>Computer Physics Communications</i> , 2019, 235, 9-15.	7.5	5
14	Persistence of Ion Temperature Gradient Turbulent Transport at Finite Normalized Pressure. <i>Physical Review Letters</i> , 2019, 123, 025003.	7.8	16
15	Improved linearized model collision operator for the highly collisional regime. <i>Physics of Plasmas</i> , 2019, 26, .	1.9	15
16	Correlation between zonal flow shearing and entropy transfer rates in toroidal ion temperature gradient turbulence. <i>Physics of Plasmas</i> , 2019, 26, 082304.	1.9	2
17	Modeling of turbulent particle and heat transport in helical plasmas based on gyrokinetic analysis. <i>Physics of Plasmas</i> , 2019, 26, 012510.	1.9	7
18	Transport Simulation for Helical Plasmas by use of Gyrokinetic Transport Model. <i>Plasma and Fusion Research</i> , 2019, 14, 3403061-3403061.	0.7	5

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19	Unstable Eigenmodes of the Feedback Instability With Collision-Induced Velocity Shear. Geophysical Research Letters, 2018, 45, 10,043.	4.0	7
20	Eulerian variational formulations and momentum conservation laws for kinetic plasma systems. Physics of Plasmas, 2018, 25, 102506.	1.9	7
21	Multi-machine analysis of turbulent transport in helical systems via gyrokinetic simulation. Nuclear Fusion, 2017, 57, 066010.	3.5	15
22	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
23	Conservation laws for collisional and turbulent transport processes in toroidal plasmas with large mean flows. Physics of Plasmas, 2017, 24, 020701.	1.9	10
24	Extension of the operational regime of the LHD towards a deuterium experiment. Nuclear Fusion, 2017, 57, 102023.	3.5	116
25	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
26	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
27	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
28	Generation of auroral turbulence through the magnetosphere-ionosphere coupling. New Journal of Physics, 2016, 18, 125010.	2.9	10
29	Validation studies of gyrokinetic ITC and TEM turbulence simulations in a JT-60U tokamak using multiple flux matching. Nuclear Fusion, 2016, 56, 086010.	3.5	27
30	Impact of hydrogen isotope species on microinstabilities in helical plasmas. Plasma Physics and Controlled Fusion, 2016, 58, 074008.	2.1	25
31	Benchmark of Electromagnetic Gyrokinetic Codes in High Performance Fusion Plasma. Plasma and Fusion Research, 2016, 11, 2403011-2403011.	0.7	0
32	Cross-Scale Interactions between Electron and Ion Scale Turbulence in a Tokamak Plasma. Physical Review Letters, 2015, 114, 255002.	7.8	90
33	Improved collision operator for plasma kinetic simulations with multi-species ions and electrons. Computer Physics Communications, 2015, 197, 61-72.	7.5	23
34	Nonlinear Entropy Transfer in ETG-TEM Turbulence via TEM Driven Zonal Flows. Plasma and Fusion Research, 2015, 10, 1403047-1403047.	0.7	1
35	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
36	Effects of collisions on conservation laws in gyrokinetic field theory. Physics of Plasmas, 2015, 22, .	1.9	12

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37	Improved strong scaling of a spectral/finite difference gyrokinetic code for multi-scale plasma turbulence. <i>Parallel Computing</i> , 2015, 49, 1-12.	2.1	11
38	Flux tube train model for local turbulence simulation of toroidal plasmas. <i>Physics of Plasmas</i> , 2015, 22, .	1.9	8
39	Turbulent transport of heat and particles in a high ion temperature discharge of the Large Helical Device. <i>Nuclear Fusion</i> , 2015, 55, 043024.	3.5	22
40	Electromagnetic gyrokinetic simulation of turbulence in torus plasmas. <i>Journal of Plasma Physics</i> , 2015, 81, .	2.1	32
41	Regulation of electron temperature gradient turbulence by zonal flows driven by trapped electron modes. <i>Physics of Plasmas</i> , 2014, 21, 052306.	1.9	9
42	Extended gyrokinetic field theory for time-dependent magnetic confinement fields. <i>Physics of Plasmas</i> , 2014, 21, 012515.	1.9	5
43	Electromagnetic gyrokinetic turbulence in finite-beta helical plasmas. <i>Physics of Plasmas</i> , 2014, 21, 055905.	1.9	20
44	Comparison between kinetic-ballooning-mode-driven turbulence and ion-temperature-gradient-driven turbulence. <i>Physics of Plasmas</i> , 2014, 21, 052301.	1.9	15
45	Verification of gyrokinetic microstability codes with an LHD configuration. <i>Physics of Plasmas</i> , 2014, 21, 112305.	1.9	4
46	Quasilinear carbon transport in an impurity hole plasma in LHD. <i>Physics of Plasmas</i> , 2014, 21, .	1.9	35
47	Communication-overlap techniques for improved strong scaling of gyrokinetic Eulerian code beyond 100k cores on the K-computer. <i>International Journal of High Performance Computing Applications</i> , 2014, 28, 73-86.	3.7	23
48	A unified model of auroral arc growth and electron acceleration in the magnetosphere-ionosphere coupling. <i>Geophysical Research Letters</i> , 2014, 41, 6071-6077.	4.0	14
49	Local Gyrokinetic Vlasov Simulations with Realistic Tokamak MHD Equilibria. <i>Plasma and Fusion Research</i> , 2014, 9, 1403029-1403029.	0.7	17
50	Exploring phase space turbulence in magnetic fusion plasmas. <i>Journal of Physics: Conference Series</i> , 2014, 510, 012045.	0.4	1
51	How to apply a turbulent transport model based on a gyrokinetic simulation for the ion temperature gradient mode in helical plasmas. <i>Journal of Physics: Conference Series</i> , 2014, 561, 012020.	0.4	8
52	Kinetic Ballooning Mode Turbulence Simulation based on Electromagnetic Gyrokinetics. <i>Plasma and Fusion Research</i> , 2014, 9, 1203020-1203020.	0.7	1
53	Conservation of energy and momentum in nonrelativistic plasmas. <i>Physics of Plasmas</i> , 2013, 20, .	1.9	10
54	Numerical techniques for parallel dynamics in electromagnetic gyrokinetic Vlasov simulations. <i>Computer Physics Communications</i> , 2013, 184, 2462-2473.	7.5	23

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55	A reduced model for ion temperature gradient turbulent transport in helical plasmas. Physics of Plasmas, 2013, 20, .	1.9	40
56	Reversible collisionless magnetic reconnection. Physics of Plasmas, 2013, 20, 102116.	1.9	10
57	Gyrokinetic turbulence simulations of high-beta tokamak and helical plasmas with full-kinetic and hybrid models. Nuclear Fusion, 2013, 53, 053007.	3.5	27
58	Relation among ITG Turbulence, Zonal Flows, and Transport in Helical Plasmas. Plasma and Fusion Research, 2013, 8, 1203019-1203019.	0.7	3
59	Computation-Communication Overlap Techniques for Parallel Spectral Calculations in Gyrokinetic Vlasov Simulations. Plasma and Fusion Research, 2013, 8, 1403150-1403150.	0.7	8
60	Nonlinear entropy transfer via zonal flows in gyrokinetic plasma turbulence. Physics of Plasmas, 2012, 19, .	1.9	56
61	Characterization of turbulence and transport in magnetic confinement devices. , 2012, , .		0
62	Gyrokinetic turbulent transport simulation of a high ion temperature plasma in large helical device experiment. Physics of Plasmas, 2012, 19, .	1.9	54
63	Hybrid Alfvén resonant mode generation in the magnetosphere-ionosphere coupling system. Physics of Plasmas, 2012, 19, .	1.9	11
64	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
65	Kinetic Simulations of Neoclassical and Anomalous Transport Processes in Helical Systems. Plasma and Fusion Research, 2012, 7, 2403094-2403094.	0.7	4
66	Zonal Flow Dynamics and Control of Turbulent Transport in Stellarators. Physical Review Letters, 2011, 107, 245002.	7.8	35
67	Feedback instability analysis for dipole configuration with ionospheric and magnetospheric cavities. Journal of Geophysical Research, 2011, 116, n/a-n/a.	3.3	14
68	Gyrokinetic Simulations of Slab Ion Temperature Gradient Turbulence with Kinetic Electrons. Plasma and Fusion Research, 2011, 6, 2403087-2403087.	0.7	5
69	Quasisymmetric toroidal plasmas with large mean flows. Physics of Plasmas, 2011, 18, 082505.	1.9	11
70	Effects of equilibrium-scale radial electric fields on zonal flows and turbulence in helical configurations. Nuclear Fusion, 2011, 51, 123003.	3.5	34
71	Effects of parallel dynamics on vortex structures in electron temperature gradient driven turbulence. Physics of Plasmas, 2011, 18, 012303.	1.9	3
72	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

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73	A Numerical Method for Parallel Particle Motions in Gyrokinetic Vlasov Simulations. Plasma and Fusion Research, 2011, 6, 2401028-2401028.	0.7	1
74	Microinstabilities, Turbulent Transport, and Structure Formation in Helical Plasmas. Fusion Science and Technology, 2010, 58, 256-268.	1.1	0
75	Benchmark test of drift-kinetic and gyrokinetic codes through neoclassical transport simulations. Computer Physics Communications, 2010, 181, 1069-1076.	7.5	40
76	Enhancement of Residual Zonal Flows in Helical Systems with Equilibrium Radial Electric Fields. Contributions To Plasma Physics, 2010, 50, 571-575.	1.1	8
77	Feedback instability in the magnetosphere-ionosphere coupling system: Revisited. Physics of Plasmas, 2010, 17, 022904.	1.9	24
78	Formation of coherent vortex streets and transport reduction in electron temperature gradient driven turbulence. Physics of Plasmas, 2010, 17, 042306.	1.9	7
79	Effects of time-varying $E \times B$ flow on slab ion-temperature-gradient turbulence. Physics of Plasmas, 2010, 17, .	1.9	6
80	Gyrokinetic Vlasov Code Including Full Three-dimensional Geometry of Experiments. Plasma and Fusion Research, 2010, 5, 016-016.	0.7	37
81	Spatiotemporal dynamics and transport reduction in helical magnetic configuration. Physics of Plasmas, 2009, 16, 092306.	1.9	8
82	Linearized model collision operators for multiple ion species plasmas and gyrokinetic entropy balance equations. Physics of Plasmas, 2009, 16, 112503.	1.9	95
83	Turbulence-driven zonal flows in helical systems with radial electric fields. Physics of Plasmas, 2009, 16, 056101.	1.9	33
84	Level-crossing function in the analysis of edge plasma turbulence. Nuclear Fusion, 2009, 49, 095016.	3.5	0
85	Drift Wave Turbulence. AIP Conference Proceedings, 2008, , .	0.4	4
86	Reduction of Turbulent Transport with Zonal Flows Enhanced in Helical Systems. Physical Review Letters, 2008, 100, 195002.	7.8	89
87	Simulation science for fusion plasmas. Journal of Physics: Conference Series, 2008, 133, 012025.	0.4	1
88	Gyrokinetic Studies of Ion Temperature Gradient Turbulence and Zonal Flows in Helical Systems. Plasma and Fusion Research, 2008, 3, 041-041.	0.7	15
89	Simulation studies on the GAM oscillation and damping in helical configurations. Nuclear Fusion, 2007, 47, 1258-1264.	3.5	19
90	Gyrokinetic simulation of zonal flows and ion temperature gradient turbulence in helical systems. Nuclear Fusion, 2007, 47, 1383-1390.	3.5	49

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91	Collisionless kinetic-fluid model of zonal flows in toroidal plasmas. <i>Physics of Plasmas</i> , 2007, 14, 022502.	1.9	37
92	Zonal flows and ion temperature gradient instabilities in multiple-helicity magnetic fields. <i>Physics of Plasmas</i> , 2007, 14, 122505.	1.9	35
93	Collisionless damping of geodesic acoustic modes. <i>Journal of Plasma Physics</i> , 2006, 72, 825.	2.1	129
94	Gyrokinetic-Vlasov simulations of the ion temperature gradient turbulence in tokamak and helical systems. <i>AIP Conference Proceedings</i> , 2006, , .	0.4	0
95	Gyrokinetic and Gyrofluid Models for Zonal Flow Dynamics in Ion and Electron Temperature Gradient Turbulence. <i>AIP Conference Proceedings</i> , 2006, , .	0.4	0
96	Simulations of Zonal Flow Damping and Electron Bernstein Waves in Helical Systems. <i>AIP Conference Proceedings</i> , 2006, , .	0.4	1
97	Kinetic simulations of turbulent fusion plasmas. <i>Comptes Rendus Physique</i> , 2006, 7, 650-669.	0.9	29
98	Velocity-space structures of distribution function in toroidal ion temperature gradient turbulence. <i>Nuclear Fusion</i> , 2006, 46, 24-32.	3.5	183
99	Collisionless damping of zonal flows in helical systems. <i>Physics of Plasmas</i> , 2006, 13, 012501.	1.9	188
100	Dynamics of Zonal Flows in Helical Systems. <i>Physical Review Letters</i> , 2005, 94, 115001.	7.8	82
101	Vlasov and Drift Kinetic Simulation Methods Based on the Symplectic Integrator. <i>Transport Theory and Statistical Physics</i> , 2005, 34, 287-309.	0.4	12
102	Microturbulence Simulation 1. What's the Microturbulence Simulation?. <i>Journal of Plasma and Fusion Research</i> , 2005, 81, 534-546.	0.4	1
103	Vlasov Simulation of the Microturbulence. <i>Journal of Plasma and Fusion Research</i> , 2005, 81, 686-697.	0.4	2
104	Prospects of Microturbulence Simulation. <i>Journal of Plasma and Fusion Research</i> , 2005, 81, 698-702.	0.4	0
105	Kinetic simulation of steady states of ion temperature gradient driven turbulence with weak collisionality. <i>Physics of Plasmas</i> , 2004, 11, 1476-1483.	1.9	80
106	Study of electromagnetic microinstabilities in helical systems with the stellarator expansion method. <i>Physics of Plasmas</i> , 2004, 11, 3068-3077.	1.9	10
107	Comparison between kinetic and fluid simulations of slab ion temperature gradient driven turbulence. <i>Physics of Plasmas</i> , 2003, 10, 726-736.	1.9	30
108	Kinetic simulation of a quasisteady state in collisionless ion temperature gradient driven turbulence. <i>Physics of Plasmas</i> , 2002, 9, 3659-3662.	1.9	47

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109	A Nondissipative Simulation Method for the Drift Kinetic Equation. Journal of the Physical Society of Japan, 2001, 70, 3565-3576.	1.6	17
110	Fokker-Planck simulation study of Alfvén eigenmode bursts. Nuclear Fusion, 2001, 41, 1153-1159.	3.5	15
111	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
112	Three dimensional simulation study of spheromak injection into magnetized plasmas. Nuclear Fusion, 2000, 40, 277-288.	3.5	12
113	Non-linear simulations of internal reconnection events in spherical tokamaks. Nuclear Fusion, 2000, 40, 721-726.	3.5	14
114	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
115	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
116	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
117	Kinetic stabilization of tilt disruption in field reversed configurations. Nuclear Fusion, 1999, 39, 2083-2087.	3.5	5
118	Modeling of magnetic island formation in magnetic reconnection experiment. Physics of Plasmas, 1999, 6, 1253-1257.	1.9	6
119	Relaxed States of a Magnetized Plasma with Minimum Dissipation. Physical Review Letters, 1998, 81, 3144-3147.	7.8	35
120	Magnetohydrodynamic simulation on co- and counter-helicity merging of spheromaks and driven magnetic reconnection. Physics of Plasmas, 1997, 4, 1297-1307.	1.9	14
121	Implementation of an Electrostatic Implicit Particle Simulation Scheme. Journal of Computational Physics, 1996, 127, 473-481.	3.8	1
122	Formation of a Field-Reversed Configuration by Coalescence of Spheromaks. Fusion Science and Technology, 1995, 27, 374-377.	0.6	4
123	Magnetohydrodynamic Vlasov simulation of the toroidal Alfvén eigenmode. Physics of Plasmas, 1995, 2, 2711-2716.	1.9	69
124	Impulsive Alfvén 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
125	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
126	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