Tomoaki Watanabe

List of Publications by Year
in descending order

70	1,022	430874 18	526287 27
papers	citations	h-index	g-index

70	70	70	343
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Turbulent mixing of passive scalar near turbulent and non-turbulent interface in mixing layers. Physics of Fluids, 2015, 27, .	4.0	68
2	Vortex stretching and compression near the turbulent/non-turbulent interface in a planar jet. Journal of Fluid Mechanics, 2014, 758, 754-785.	3.4	52
3	Turbulent/non-turbulent interfaces detected in DNS of incompressible turbulent boundary layers. Physics of Fluids, 2018, 30, 035102.	4.0	49
4	Enstrophy and passive scalar transport near the turbulent/non-turbulent interface in a turbulent planar jet flow. Physics of Fluids, 2014, 26, .	4.0	43
5	Turbulent/non-turbulent interfaces in wakes in stably stratified fluids. Journal of Fluid Mechanics, 2016, 797, .	3.4	42
6	Lagrangian properties of the entrainment across turbulent/non-turbulent interface layers. Physics of Fluids, 2016, 28, 031701.	4.0	35
7	Turbulent/non-turbulent interfaces in temporally evolving compressible planar jets. Physics of Fluids, 2018, 30, .	4.0	31
8	Turbulent/nonturbulent interfaces in high-resolution direct numerical simulation of temporally evolving compressible turbulent boundary layers. Physical Review Fluids, 2018, 3, .	2.5	28
9	Role of an isolated eddy near the turbulent/non-turbulent interface layer. Physical Review Fluids, 2017, 2, .	2.5	27
10	A localized turbulent mixing layer in a uniformly stratified environment. Journal of Fluid Mechanics, 2018, 849, 245-276.	3.4	25
11	Direct numerical simulation of incompressible turbulent boundary layers and planar jets at high Reynolds numbers initialized with implicit large eddy simulation. Computers and Fluids, 2019, 194, 104314.	2.5	25
12	Hairpin vortices and highly elongated flow structures in a stably stratified shear layer. Journal of Fluid Mechanics, 2019, 878, 37-61.	3.4	23
13	Geometrical aspects of turbulent/non-turbulent interfaces with and without mean shear. Physics of Fluids, 2017, 29, 085105.	4.0	22
14	Triple decomposition of velocity gradient tensor in homogeneous isotropic turbulence. Computers and Fluids, 2020, 198, 104389.	2.5	21
15	Effects of stable stratification on turbulent/nonturbulent interfaces in turbulent mixing layers. Physical Review Fluids, 2016, 1, .	2.5	20
16	Simultaneous measurements of reactive scalar and velocity in a planar liquid jet with a second-order chemical reaction. Experiments in Fluids, 2012, 53, 1369-1383.	2.4	18
17	Finite response time of shock wave modulation by turbulence. Physics of Fluids, 2017, 29, .	4.0	18
18	Integral invariants and decay of temporally developing grid turbulence. Physics of Fluids, 2018, 30, 105111.	4.0	18

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19	Wavelet analysis of coherent vorticity near the turbulent/non-turbulent interface in a turbulent planar jet. Physics of Fluids, 2014, 26, .	4.0	17
20	Experimental study on the reaction rate of a secondâ€•order chemical reaction in a planar liquid jet. AICHE Journal, 2014, 60, 3969-3988.	3.6	17
21	Mixing model with multi-particle interactions for Lagrangian simulations of turbulent mixing. Physics of Fluids, 2016, 28, .	4.0	16
22	Non-dimensional energy dissipation rate near the turbulent/non-turbulent interfacial layer in free shear flows and shear free turbulence. Journal of Fluid Mechanics, 2019, 875, 321-344.	3.4	16
23	The relation between shearing motions and the turbulent/non-turbulent interface in a turbulent planar jet. Physics of Fluids, 2021, 33, 055126.	4.0	16
24	Reactive scalar field near the turbulent/non-turbulent interface in a planar jet with a second-order chemical reaction. Physics of Fluids, 2014, 26, .	4.0	15
25	Mixing and chemical reaction at high Schmidt number near turbulent/nonturbulent interface in planar liquid jet. Physics of Fluids, 2015, 27, .	4.0	15
26	Large eddy simulation study of turbulent kinetic energy and scalar variance budgets and turbulent/non-turbulent interface in planar jets. Fluid Dynamics Research, 2016, 48, 021407.	1.3	15
27	Amplification and attenuation of shock wave strength caused by homogeneous isotropic turbulence. Physics of Fluids, 2018, 30, 035105.	4.0	15
28	Energy dissipation and enstrophy production/destruction at very low Reynolds numbers in the final stage of the transition period of decay in grid turbulence. Physics of Fluids, 2021, 33, .	4.0	15
29	Large-scale characteristics of a stably stratified turbulent shear layer. Journal of Fluid Mechanics, 2021, 927, .	3.4	15
30	Turbulent entrainment across turbulent-nonturbulent interfaces in stably stratified mixing layers. Physical Review Fluids, 2017, 2, .	2.5	15
31	VISUALIZATION OF TURBULENT REACTIVE JET BY USING DIRECT NUMERICAL SIMULATION. International Journal of Modeling, Simulation, and Scientific Computing, 2013, 04, 1341001.	1.4	13
32	Turbulent Schmidt number and eddy diffusivity change with a chemical reaction. Journal of Fluid Mechanics, 2014, 754, 98-121.	3.4	13
33	Characteristics of shearing motions in incompressible isotropic turbulence. Physical Review Fluids, 2020, 5, .	2.5	13
34	LESâ€“Lagrangian particle method for turbulent reactive flows based on the approximate deconvolution model and mixing model. Journal of Computational Physics, 2015, 294, 127-148.	3.8	12
35	Extreme events and non-Kolmogorov spectra in turbulent flows behind two side-by-side square cylinders. Journal of Fluid Mechanics, 2019, 874, 677-698.	3.4	12
36	Statistics of overpressure fluctuations behind a weak shock wave interacting with turbulence. Physics of Fluids, 2019, 31, .	4.0	12

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37	Scale-by-scale kinetic energy budget near the turbulent/nonturbulent interface. Physical Review Fluids, 2020, 5, .	2.5	12
38	Implicit large eddy simulation of a scalar mixing layer in fractal grid turbulence. Physica Scripta, 2016, 91, 074007.	2.5	11
39	Multi-particle dispersion during entrainment in turbulent free-shear flows. Journal of Fluid Mechanics, 2016, 805, .	3.4	11
40	Characteristics of small-scale shear layers in a temporally evolving turbulent planar jet. Journal of Fluid Mechanics, 2021, 920, .	3.4	11
41	Gradients estimation from random points with volumetric tensor in turbulence. Journal of Computational Physics, 2017, 350, 518-529.	3.8	10
42	Energy transfer in turbulent flows behind two side-by-side square cylinders. Journal of Fluid Mechanics, 2020, 903, .	3.4	9
43	Solenoidal linear forcing for compressible, statistically steady, homogeneous isotropic turbulence with reduced turbulent Mach number oscillation. Physics of Fluids, 2021, 33, .	4.0	9
44	Dual-plane turbulent jets and their non-Gaussian velocity fluctuations. Physical Review Fluids, 2018, 3, .	2.5	9
45	Joint statistics between velocity and reactive scalar in a turbulent liquid jet with a chemical reaction. Physica Scripta, 2013, T155, 014039.	2.5	8
46	Modeling of molecular diffusion and thermal conduction with multi-particle interaction in compressible turbulence. Physics of Fluids, 2018, 30, .	4.0	8
47	Multi-particle model of coarse-grained scalar dissipation rate with volumetric tensor in turbulence. Journal of Computational Physics, 2019, 389, 128-146.	3.8	8
48	Statistical analysis of deformation of a shock wave propagating in a local turbulent region. Physics of Fluids, 2020, 32, .	4.0	8
49	Turbulent characteristics and energy transfer in the far field of active-grid turbulence. Physics of Fluids, 2021, 33, .	4.0	8
50	Experimental investigation of interactions between turbulent cylinder wake and spherical shock wave. Physics of Fluids, 2020, 32, 016101.	4.0	7
51	Implicit large eddy simulation of passive scalar transfer in compressible planar jet. International Journal for Numerical Methods in Fluids, 2021, 93, 1183-1198.	1.6	7
52	LESâ€“Lagrangianâ€particlesâ€simulation of turbulent reactive flows at high Sc number using approximate deconvolution model. AICHE Journal, 2016, 62, 2912-2922.	3.6	6
53	Supersonic piston synthetic jets with single/multiple orifice. Experiments in Fluids, 2018, 59, 1.	2.4	6
54	Wavelet analysis of shearless turbulent mixing layer. Physics of Fluids, 2021, 33, 025109.	4.0	6

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55	Experimental and numerical investigation of compressibility effects on velocity derivative flatness in turbulence. Physics of Fluids, 2022, 34, .	4.0	6
56	Statistical properties of spherical shock waves propagating through grid turbulence, turbulent cylinder wake, and laminar flow. Physica Scripta, 2019, 94, 044004.	2.5	5
57	Passive scalar mixing near turbulent/non-turbulent interface in compressible turbulent boundary layers. Physica Scripta, 2019, 94, 044002.	2.5	5
58	Multi-particle models of molecular diffusion for Lagrangian simulation coupled with LES for passive scalar mixing in compressible turbulence. Computers and Fluids, 2021, 221, 104886.	2.5	5
59	Vertical confinement effects on a fully developed turbulent shear layer. Physics of Fluids, 2022, 34, .	4.0	5
60	Color contamination correction based on light intensity correlation in two-color, double-exposure particle tracking velocimetry. Experiments in Fluids, 2020, 61, 1.	2.4	3
61	Experimental study of shock wave modulation caused by velocity and temperature fluctuations in cylinder wakes. Physical Review Fluids, 2021, 6, .	2.5	3
62	Turbulence generated by an array of opposed piston-driven synthetic jet actuators. Experiments in Fluids, 2022, 63, 1.	2.4	3
63	Conditional statistics near the turbulent/non-turbulent interface in a planar liquid jet with a chemical reaction. Transactions of the JSME (in Japanese), 2014, 80, FE0228-FE0228.	0.2	2
64	Concentration measurement in a planar liquid jet with a chemical reaction by using the improved concentration measurement system based on the light absorption spectrometric method. Journal of Fluid Science and Technology, 2014, 9, JFST0041-JFST0041.	0.6	2
65	Statistical properties of a model of a turbulent patch arising from a breaking internal wave. Physics of Fluids, 2021, 33, 055107.	4.0	2
66	Conditional statistics in a planar liquid jet with a second-order chemical reaction. International Journal of Heat and Mass Transfer, 2015, 83, 768-780.	4.8	0
67	DNSâ€“PDF Simulation of Turbulent Mixing in a Reactive Planar Jet. Communications in Computer and Information Science, 2013, , 445-452.	0.5	0
68	10.1063/5.0085423.1. , 2022, , .		0
69	10.1063/5.0085423.2. , 2022, , .		0
70	10.1063/5.0085423.3. , 2022, , .		0