

Gregory Falkovich

List of Publications by Year in descending order

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149
papers

8,607
citations

61984

43
h-index

45317

90
g-index

159
all docs

159
docs citations

159
times ranked

3826
citing authors

#	ARTICLE	IF	CITATIONS
1	Particles and fields in fluid turbulence. <i>Reviews of Modern Physics</i> , 2001, 73, 913-975.	45.6	1,079
2	Kolmogorov Spectra of Turbulence I. <i>Springer Series in Nonlinear Dynamics</i> , 1992, , .	0.2	927
3	Acceleration of rain initiation by cloud turbulence. <i>Nature</i> , 2002, 419, 151-154.	27.8	533
4	Intermittent Distribution of Inertial Particles in Turbulent Flows. <i>Physical Review Letters</i> , 2001, 86, 2790-2793.	7.8	300
5	Superballistic flow of viscous electron fluid through graphene constrictions. <i>Nature Physics</i> , 2017, 13, 1182-1185.	16.7	288
6	Electron viscosity, current vortices and negative nonlocal resistance in graphene. <i>Nature Physics</i> , 2016, 12, 672-676.	16.7	270
7	Bottleneck phenomenon in developed turbulence. <i>Physics of Fluids</i> , 1994, 6, 1411-1414.	4.0	261
8	Normal and anomalous scaling of the fourth-order correlation function of a randomly advected passive scalar. <i>Physical Review E</i> , 1995, 52, 4924-4941.	2.1	249
9	The laminar-turbulent transition in a fibre laser. <i>Nature Photonics</i> , 2013, 7, 783-786.	31.4	177
10	Lessons from hydrodynamic turbulence. <i>Physics Today</i> , 2006, 59, 43-49.	0.3	170
11	Higher-than-ballistic conduction of viscous electron flows. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, 3068-3073.	7.1	165
12	Conformal invariance in two-dimensional turbulence. <i>Nature Physics</i> , 2006, 2, 124-128.	16.7	154
13	Instantons and intermittency. <i>Physical Review E</i> , 1996, 54, 4896-4907.	2.1	142
14	Upscale energy transfer in thick turbulent fluid layers. <i>Nature Physics</i> , 2011, 7, 321-324.	16.7	139
15	Fluidity onset in graphene. <i>Nature Communications</i> , 2018, 9, 4533.	12.8	136
16	Statistics of a passive scalar advected by a large-scale two-dimensional velocity field: Analytic solution. <i>Physical Review E</i> , 1995, 51, 5609-5627.	2.1	132
17	Anomalous Scaling Exponents of a White-Advection Passive Scalar. <i>Physical Review Letters</i> , 1996, 76, 2706-2709.	7.8	128
18	Sling Effect in Collisions of Water Droplets in Turbulent Clouds. <i>Journals of the Atmospheric Sciences</i> , 2007, 64, 4497-4505.	1.7	128

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19	Intermittent distribution of heavy particles in a turbulent flow. <i>Physics of Fluids</i> , 2004, 16, L47-L50.	4.0	116
20	Wave kinetics of random fibre lasers. <i>Nature Communications</i> , 2015, 6, 6214.	12.8	112
21	Intermittency of Burgers' Turbulence. <i>Physical Review Letters</i> , 1997, 78, 1452-1455.	7.8	108
22	Spectrally condensed turbulence in thin layers. <i>Physics of Fluids</i> , 2009, 21, .	4.0	99
23	Small-Scale Turbulent Dynamo. <i>Physical Review Letters</i> , 1999, 83, 4065-4068.	7.8	83
24	Fluctuation relations in simple examples of non-equilibrium steady states. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2008, 2008, P08005.	2.3	83
25	Inverse Turbulent Cascades and Conformally Invariant Curves. <i>Physical Review Letters</i> , 2007, 98, 024501.	7.8	80
26	Flightâ€“crash events in turbulence. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, 7558-7563.	7.1	72
27	Floater clustering in a standing wave. <i>Nature</i> , 2005, 435, 1045-1046.	27.8	69
28	Turbulence-Condensate Interaction in Two Dimensions. <i>Physical Review Letters</i> , 2008, 101, 194504.	7.8	69
29	Conservation laws and two-flux spectra of hydrodynamic convective turbulence. <i>Physica D: Nonlinear Phenomena</i> , 1992, 57, 85-95.	2.8	63
30	Statistics of soliton-bearing systems with additive noise. <i>Physical Review E</i> , 2001, 63, 025601.	2.1	63
31	Universal Profile of the Vortex Condensate in Two-Dimensional Turbulence. <i>Physical Review Letters</i> , 2014, 113, 254503.	7.8	61
32	Non-equilibrium Statistical Mechanics and Turbulence. , 2008, , .		61
33	Intermittent Dissipation of a Passive Scalar in Turbulence. <i>Physical Review Letters</i> , 1998, 80, 2121-2124.	7.8	60
34	Universal direct cascade in two-dimensional turbulence. <i>Physical Review E</i> , 1994, 50, 3883-3899.	2.1	56
35	New relations for correlation functions in Navierâ€“Stokes turbulence. <i>Journal of Fluid Mechanics</i> , 2010, 644, 465-472.	3.4	55
36	Suppression of Turbulence by Self-Generated and Imposed Mean Flows. <i>Physical Review Letters</i> , 2007, 99, 164502.	7.8	54

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37	Nonlocal vorticity cascade in two dimensions. <i>Physical Review E</i> , 1994, 49, R1800-R1803.	2.1	53
38	Linking Spatial Distributions of Potential and Current in Viscous Electronics. <i>Physical Review Letters</i> , 2017, 119, 066601.	7.8	53
39	Droplet condensation in turbulent flows. <i>Europhysics Letters</i> , 2005, 70, 775-781.	2.0	50
40	Optical turbulence and spectral condensate in long-fiber lasers. <i>Physical Review A</i> , 2009, 80, .	2.5	50
41	On the stability of nonlinear waves in integrable models. <i>Physica D: Nonlinear Phenomena</i> , 1984, 10, 379-386.	2.8	47
42	Nonuniversality of the Scaling Exponents of a Passive Scalar Convected by a Random Flow. <i>Physical Review Letters</i> , 1996, 76, 3707-3710.	7.8	47
43	On Lagrangian single-particle statistics. <i>Physics of Fluids</i> , 2012, 24, 055102.	4.0	46
44	Generation and reversal of surface flows by propagating waves. <i>Nature Physics</i> , 2014, 10, 658-663.	16.7	44
45	Nonstationary wave turbulence. <i>Journal of Nonlinear Science</i> , 1991, 1, 457-480.	2.1	42
46	Symmetries of the turbulent state. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2009, 42, 123001.	2.1	39
47	Stationary spectrum of vorticity cascade in two-dimensional turbulence. <i>Physical Review E</i> , 2002, 65, 056305.	2.1	37
48	Jets or vortices? What flows are generated by an inverse turbulent cascade?. <i>Physical Review Fluids</i> , 2017, 2, .	2.5	37
49	Entropy production and extraction in dynamical systems and turbulence. <i>New Journal of Physics</i> , 2004, 6, 50-50.	2.9	36
50	Single-Point Velocity Distribution in Turbulence. <i>Physical Review Letters</i> , 1997, 79, 4159-4161.	7.8	35
51	Destruction of stationary solutions and collapse in the nonlinear string equation. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1983, 99, 271-274.	2.1	33
52	Particle Collisions and Negative Nonlocal Response of Ballistic Electrons. <i>Physical Review Letters</i> , 2018, 121, 176805.	7.8	33
53	Light transport and vortex-supported wave-guiding in micro-structured optical fibres. <i>Scientific Reports</i> , 2020, 10, 2507.	3.3	33
54	Direct observation of vortices in an electron fluid. <i>Nature</i> , 2022, 607, 74-80.	27.8	33

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55	Inverse cascade and wave condensate in mesoscale atmospheric turbulence. <i>Physical Review Letters</i> , 1992, 69, 3173-3176.	7.8	32
56	How Waves Affect the Distribution of Particles that Float on a Liquid Surface. <i>Physical Review Letters</i> , 2006, 97, 244501.	7.8	30
57	Condensate turbulence in two dimensions. <i>Physical Review E</i> , 1996, 54, 5095-5099.	2.1	28
58	Lagrangian and Eulerian descriptions of inertial particles in random flows. <i>Journal of Turbulence</i> , 2007, 8, N16.	1.4	28
59	Flux correlations in supersonic isothermal turbulence. <i>Journal of Fluid Mechanics</i> , 2012, 713, 482-490.	3.4	28
60	Kolmogorov-like Spectrum for Turbulence of Inertial-Gravity Waves. <i>Europhysics Letters</i> , 1992, 19, 279-284.	2.0	25
61	Optical turbulence and spectral condensate in long fibre lasers. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2012, 468, 2496-2508.	2.1	25
62	Anomalous Scaling of a Passive Scalar in Turbulence and in Equilibrium. <i>Physical Review Letters</i> , 2005, 94, 214502.	7.8	23
63	Freely Flowing Currents and Electric Field Expulsion in Viscous Electronics. <i>Physical Review Letters</i> , 2019, 123, 026801.	7.8	23
64	Counterbalanced interaction locality of developed hydrodynamic turbulence. <i>Physical Review A</i> , 1992, 46, 4762-4772.	2.5	22
65	Localization-Delocalization Transitions in Turbophoresis of Inertial Particles. <i>Physical Review Letters</i> , 2014, 112, 234502.	7.8	22
66	Non-Gaussian error probability in optical soliton transmission. <i>Physica D: Nonlinear Phenomena</i> , 2004, 195, 1-28.	2.8	21
67	Single Flow Snapshot Reveals the Future and the Past of Pairs of Particles in Turbulence. <i>Physical Review Letters</i> , 2013, 110, 214502.	7.8	21
68	Could waves mix the ocean?. <i>Journal of Fluid Mechanics</i> , 2009, 638, 1-4.	3.4	20
69	Vorticity statistics in the direct cascade of two-dimensional turbulence. <i>Physical Review E</i> , 2011, 83, 045301.	2.1	20
70	Growth of Density Inhomogeneities in a Flow of Wave Turbulence. <i>Physical Review Letters</i> , 2004, 92, 244504.	7.8	19
71	Phase transitions in wave turbulence. <i>Physical Review E</i> , 2012, 85, 010101.	2.1	18
72	Three-point correlation function of a scalar mixed by an almost smooth random velocity field. <i>Physical Review E</i> , 1997, 55, R4881-R4884.	2.1	17

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73	Introduction to Focus Issue: Two-Dimensional Turbulence. <i>Physics of Fluids</i> , 2017, 29, .	4.0	17
74	Interaction between mean flow and turbulence in two dimensions. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2016, 472, 20160287.	2.1	16
75	Alternating currents and shear waves in viscous electronics. <i>Physical Review B</i> , 2018, 97, .	3.2	16
76	Clustering of matter in waves and currents. <i>Physical Review E</i> , 2007, 75, 065301.	2.1	15
77	Inertial particles driven by a telegraph noise. <i>Physical Review E</i> , 2007, 76, 026313.	2.1	15
78	Singular Measures and Information Capacity of Turbulent Cascades. <i>Physical Review Letters</i> , 2020, 125, 104501.	7.8	15
79	Nonlinear interaction between long inertio-gravity and rossby waves. <i>Nonlinear Processes in Geophysics</i> , 1994, 1, 168-171.	1.3	14
80	Large-scale properties of wave turbulence. <i>Physical Review E</i> , 1995, 52, 4537-4540.	2.1	14
81	Large-scale properties of passive scalar advection. <i>Physics of Fluids</i> , 1999, 11, 2269-2279.	4.0	14
82	Rain Initiation Time in Turbulent Warm Clouds. <i>Journal of Applied Meteorology and Climatology</i> , 2006, 45, 591-599.	1.5	14
83	Conformal invariance in hydrodynamic turbulence. <i>Russian Mathematical Surveys</i> , 2007, 62, 497-510.	0.6	14
84	Redistribution of Kinetic Energy in Turbulent Flows. <i>Physical Review X</i> , 2014, 4, .	8.9	14
85	How vortices and shocks provide for a flux loop in two-dimensional compressible turbulence. <i>Physical Review Fluids</i> , 2017, 2, .	2.5	14
86	On the stability of a self-similar solution in the burgers equation. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1981, 86, 203-204.	2.1	13
87	Two-dimensional acoustic turbulence. <i>Physical Review E</i> , 1996, 54, 4431-4434.	2.1	13
88	Two complementary descriptions of intermittency. <i>Physical Review E</i> , 1998, 57, R1231-R1234.	2.1	13
89	Nodal patterns of floaters in surface waves. <i>European Physical Journal: Special Topics</i> , 2007, 145, 125-136.	2.6	13
90	Statistics of interacting optical solitons. <i>Physical Review E</i> , 2001, 64, 067602.	2.1	12

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91	Role of interaction in causing errors in optical soliton transmission. Optics Letters, 2002, 27, 13.	3.3	12
92	Cascades in nonlocal turbulence. Physical Review E, 2015, 91, 041201.	2.1	12
93	Turbulence Appearance and Nonappearance in Thin Fluid Layers. Physical Review Letters, 2018, 121, 164501.	7.8	12
94	Decay Turbulence of Capillary Waves. Europhysics Letters, 1995, 29, 1-6.	2.0	11
95	Turbulence on Hyperbolic Plane: The Fate of Inverse Cascade. Journal of Statistical Physics, 2014, 156, 10-54.	1.2	11
96	Time irreversibility of the statistics of a single particle in compressible turbulence. Physical Review E, 2015, 91, 043022.	2.1	11
97	Is 2D turbulence a conformal turbulence?. Physical Review Letters, 1993, 71, 3454-3457.	7.8	10
98	Isotropic and anisotropic turbulence in Clebsch variables. Chaos, Solitons and Fractals, 1995, 5, 1855-1869.	5.1	10
99	Turbulence with an infinite number of conservation laws. Physical Review E, 1994, 49, 2468-2471.	2.1	9
100	Fibonacci Turbulence. Physical Review X, 2021, 11, .	8.9	9
101	Viscous Instanton for Burgers' Turbulence. International Journal of Modern Physics B, 1997, 11, 3223-3245.	2.0	8
102	Particle dispersion in a multidimensional random flow with arbitrary temporal correlations. Physica A: Statistical Mechanics and Its Applications, 1998, 249, 36-46.	2.6	8
103	Evolution of non-uniformly seeded warm clouds in idealized turbulent conditions. New Journal of Physics, 2008, 10, 075019.	2.9	8
104	Oscillations in a turbulence-condensate system. Physical Review E, 2013, 87, 065202.	2.1	8
105	New Type of Anomaly in Turbulence. Physical Review Letters, 2014, 113, 024501.	7.8	7
106	Particle Dispersion in the Neutral Atmospheric Surface Layer. Boundary-Layer Meteorology, 2016, 159, 23-40.	2.3	7
107	Statistics of Turbulence-Induced Fluctuations of Particle Concentration. , 2003, , 155-158.		7
108	Kolmogorov spectra of Langmuir and optical turbulence. Physics of Fluids B, 1992, 4, 594-598.	1.7	6

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109	The Russian school. , 0, , 209-237.		6
110	Operator product expansion and multi-point correlations in turbulent energy cascades. Journal of Physics A: Mathematical and Theoretical, 2015, 48, 18FT02.	2.1	6
111	Confinement of surface spinners in liquid metamaterials. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 25424-25429.	7.1	6
112	Krzysztof Gawłdzki. Soluble models of turbulent transport. , 2008, , 44-107.		5
113	Xia et al. Reply. Physical Review Letters, 2009, 102, .	7.8	5
114	Introduction to Developed Turbulence. World Scientific Lecture Notes in Complex Systems, 2006, , 1-20.	0.1	5
115	On the stability of Kolmogorov spectra of a weak turbulence. Physica D: Nonlinear Phenomena, 1987, 27, 399-411.	2.8	4
116	THEORY OF RANDOM ADVECTION IN TWO DIMENSIONS. International Journal of Modern Physics B, 1996, 10, 2273-2309.	2.0	4
117	Second-harmonic generation as a minimal model of turbulence. Physical Review E, 2021, 104, 014129.	2.1	4
118	Collective modes in open systems of nonlinear random waves. Physical Review B, 1993, 48, 9855-9857.	3.2	3
119	Joint behavior of inertio-gravity and Rossby waves. Physica D: Nonlinear Phenomena, 1995, 87, 285-289.	2.8	3
120	Comment on "Exact Results on Scaling Exponents in the 2D Enstrophy Cascade". Physical Review Letters, 1996, 76, 1974-1974.	7.8	3
121	Fluid-particle separation in a random flow described by the telegraph model. Physical Review E, 2007, 76, 026312.	2.1	3
122	Gregory Falkovich. Introduction to turbulence theory. , 2008, , 1-43.		3
123	Inelastic collapse and near-wall localization of randomly accelerated particles. Physical Review E, 2016, 93, 052206.	2.1	3
124	Cascade and scaling. Scholarpedia Journal, 2008, 3, 6088.	0.3	3
125	Feedback of a small-scale magnetic dynamo. Physical Review E, 2000, 63, 016408.	2.1	2
126	Clustering of Floating Particles by Surface Waves. Journal of Low Temperature Physics, 2006, 145, 297-310.	1.4	2

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127	Turbulence in fluid layers. <i>Journal of Physics: Conference Series</i> , 2011, 318, 012001.	0.4	2
128	Fractal Iso-Contours of Passive Scalar in Two-Dimensional Smooth Random Flows. <i>Journal of Statistical Physics</i> , 2012, 147, 424-435.	1.2	2
129	Phase transitions in the distribution of inelastically colliding inertial particles. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2016, 49, 035102.	2.1	2
130	Precise measurements of torque in von Karman swirling flow driven by a bladed disk. <i>Journal of Turbulence</i> , 2018, 19, 647-663.	1.4	2
131	Emerging scale invariance in a model of turbulence of vortices and waves. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2022, 380, 20210080.	3.4	2
132	Nonlocal angular instability of a Kolmogorov-like wave turbulence spectrum. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1992, 168, 127-132.	2.1	1
133	Evolution of a passive scalar spectrum in the flow of random waves. <i>Physical Review E</i> , 2005, 71, 067304.	2.1	1
134	Averaging operators in turbulence. <i>Physics Today</i> , 2006, 59, 17-17.	0.3	1
135	Nodal lines in turbulence. <i>European Physical Journal: Special Topics</i> , 2007, 145, 211-216.	2.6	1
136	Optical turbulence and spectral condensate in fibre lasers. , 2011, , .		1
137	Conservation law of turbulent dispersion. <i>Journal of Plasma Physics</i> , 2015, 81, .	2.1	1
138	Entropic characterization of the coil-stretch transition of polymers in random flows. <i>Physical Review E</i> , 2021, 103, 033107.	2.1	1
139	Turbulence of Capillary Waves on Shallow Water. <i>Fluids</i> , 2021, 6, 185.	1.7	1
140	Universal and nonuniversal properties of the passive scalar statistics. , 1999, , 419-426.		1
141	Structural instability of two-dimensional turbulence. <i>Physica D: Nonlinear Phenomena</i> , 1994, 78, 11-29.	2.8	0
142	Two stages of decay turbulence of capillary waves. <i>International Journal of Non-Linear Mechanics</i> , 1995, 30, 609-616.	2.6	0
143	Lagrangian Dispersion (Passive Scalar). , 2006, , 255-260.		0
144	Focus on Cloud Physics. <i>New Journal of Physics</i> , 2008, 10, 075012.	2.9	0

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145	Anomalous Scaling Exponents of a Passive Scalar Advection by Turbulence. Fluid Mechanics and Its Applications, 1996, , 577-580.	0.2	0
146	Universal direct cascade in two-dimensional turbulence. World Scientific Series in 20th Century Physics, 1996, , 516-532.	0.0	0
147	Lagrangian Description of Turbulence. , 2001, , 505-554.		0
148	Conformal invariance in two-dimensional turbulence. , 2007, , 164-166.		0
149	Clustering and Mixing of Floating Particles by Surface Waves. , 0, , 257-267.		0