

Gregory G Howes

List of Publications by Year in descending order

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90
papers

5,750
citations

81743

39
h-index

74018

75
g-index

93
all docs

93
docs citations

93
times ranked

2551
citing authors

#	ARTICLE	IF	CITATIONS
1	ASTROPHYSICAL GYROKINETICS: KINETIC AND FLUID TURBULENT CASCADES IN MAGNETIZED WEAKLY COLLISIONAL PLASMAS. <i>Astrophysical Journal, Supplement Series</i> , 2009, 182, 310-377.	3.0	697
2	Highly structured slow solar wind emerging from an equatorial coronal hole. <i>Nature</i> , 2019, 576, 237-242.	13.7	401
3	Magnetic Fluctuation Power Near Proton Temperature Anisotropy Instability Thresholds in the Solar Wind. <i>Physical Review Letters</i> , 2009, 103, 211101.	2.9	371
4	A model of turbulence in magnetized plasmas: Implications for the dissipation range in the solar wind. <i>Journal of Geophysical Research</i> , 2008, 113, .	3.3	281
5	Astrophysical Gyrokinetics: Basic Equations and Linear Theory. <i>Astrophysical Journal</i> , 2006, 651, 590-614.	1.6	265
6	Kinetic Simulations of Magnetized Turbulence in Astrophysical Plasmas. <i>Physical Review Letters</i> , 2008, 100, 065004.	2.9	254
7	IDENTIFICATION OF KINETIC ALFVÉN WAVE TURBULENCE IN THE SOLAR WIND. <i>Astrophysical Journal Letters</i> , 2012, 745, L9.	3.0	250
8	Gyrokinetic Simulations of Solar Wind Turbulence from Ion to Electron Scales. <i>Physical Review Letters</i> , 2011, 107, 035004.	2.9	205
9	THE SLOW-MODE NATURE OF COMPRESSIBLE WAVE POWER IN SOLAR WIND TURBULENCE. <i>Astrophysical Journal Letters</i> , 2012, 753, L19.	3.0	136
10	CURRENT SHEETS AND COLLISIONLESS DAMPING IN KINETIC PLASMA TURBULENCE. <i>Astrophysical Journal Letters</i> , 2013, 771, L27.	3.0	127
11	A prescription for the turbulent heating of astrophysical plasmas. <i>Monthly Notices of the Royal Astronomical Society: Letters</i> , 2010, 409, L104-L108.	1.2	125
12	Evidence for electron Landau damping in space plasma turbulence. <i>Nature Communications</i> , 2019, 10, 740.	5.8	123
13	Nonlinear Phase Mixing and Phase-Space Cascade of Entropy in Gyrokinetic Plasma Turbulence. <i>Physical Review Letters</i> , 2009, 103, 015003.	2.9	107
14	Gyrokinetic turbulence: a nonlinear route to dissipation through phase space. <i>Plasma Physics and Controlled Fusion</i> , 2008, 50, 124024.	0.9	106
15	USING SYNTHETIC SPACECRAFT DATA TO INTERPRET COMPRESSIBLE FLUCTUATIONS IN SOLAR WIND TURBULENCE. <i>Astrophysical Journal</i> , 2012, 755, 159.	1.6	89
16	CONSTRAINING LOW-FREQUENCY ALFVÉNIC TURBULENCE IN THE SOLAR WIND USING DENSITY-FLUCTUATION MEASUREMENTS. <i>Astrophysical Journal</i> , 2009, 707, 1668-1675.	1.6	88
17	Multiscale Nature of the Dissipation Range in Gyrokinetic Simulations of Alfvénic Turbulence. <i>Physical Review Letters</i> , 2015, 115, 025003.	2.9	88
18	A weakened cascade model for turbulence in astrophysical plasmas. <i>Physics of Plasmas</i> , 2011, 18, .	0.7	80

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19	Evidence of critical balance in kinetic Alfvén wave turbulence simulations. <i>Physics of Plasmas</i> , 2012, 19, .	0.7	75
20	Alfvén wave collisions, the fundamental building block of plasma turbulence. I. Asymptotic solution. <i>Physics of Plasmas</i> , 2013, 20, .	0.7	72
21	COLLISIONLESS DAMPING AT ELECTRON SCALES IN SOLAR WIND TURBULENCE. <i>Astrophysical Journal</i> , 2013, 774, 139.	1.6	71
22	AstroGK: Astrophysical gyrokinetics code. <i>Journal of Computational Physics</i> , 2010, 229, 9347-9372.	1.9	70
23	A dynamical model of plasma turbulence in the solar wind. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2015, 373, 20140145.	1.6	70
24	VALIDITY OF THE TAYLOR HYPOTHESIS FOR LINEAR KINETIC WAVES IN THE WEAKLY COLLISIONAL SOLAR WIND. <i>Astrophysical Journal</i> , 2014, 789, 106.	1.6	67
25	Ion-scale Electromagnetic Waves in the Inner Heliosphere. <i>Astrophysical Journal, Supplement Series</i> , 2020, 246, 66.	3.0	67
26	ON THE INTERPRETATION OF MAGNETIC HELICITY SIGNATURES IN THE DISSIPATION RANGE OF SOLAR WIND TURBULENCE. <i>Astrophysical Journal Letters</i> , 2010, 709, L49-L52.	3.0	64
27	INTERPRETING MAGNETIC VARIANCE ANISOTROPY MEASUREMENTS IN THE SOLAR WIND. <i>Astrophysical Journal</i> , 2012, 753, 107.	1.6	64
28	MEASURING COLLISIONLESS DAMPING IN HELIOSPHERIC PLASMAS USING FIELD-Particle CORRELATIONS. <i>Astrophysical Journal Letters</i> , 2016, 826, L30.	3.0	63
29	Diagnosing collisionless energy transfer using field-particle correlations: gyrokinetic turbulence. <i>Journal of Plasma Physics</i> , 2017, 83, .	0.7	61
30	Steep, transient density gradients in the Martian ionosphere similar to the ionopause at Venus. <i>Journal of Geophysical Research</i> , 2009, 114, .	3.3	59
31	PHYSICAL INTERPRETATION OF THE ANGLE-DEPENDENT MAGNETIC HELICITY SPECTRUM IN THE SOLAR WIND: THE NATURE OF TURBULENT FLUCTUATIONS NEAR THE PROTON GYORADIUS SCALE. <i>Astrophysical Journal</i> , 2014, 785, 138.	1.6	57
32	Diagnosing collisionless energy transfer using field-particle correlations: Vlasov-Poisson plasmas. <i>Journal of Plasma Physics</i> , 2017, 83, .	0.7	56
33	Predicted impacts of proton temperature anisotropy on solar wind turbulence. <i>Physics of Plasmas</i> , 2015, 22, .	0.7	55
34	Inertial range turbulence in kinetic plasmas. <i>Physics of Plasmas</i> , 2008, 15, .	0.7	51
35	THE VIOLATION OF THE TAYLOR HYPOTHESIS IN MEASUREMENTS OF SOLAR WIND TURBULENCE. <i>Astrophysical Journal Letters</i> , 2014, 790, L20.	3.0	49
36	Laboratory space physics: Investigating the physics of space plasmas in the laboratory. <i>Physics of Plasmas</i> , 2018, 25, .	0.7	46

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37	Toward Astrophysical Turbulence in the Laboratory. <i>Physical Review Letters</i> , 2012, 109, 255001.	2.9	43
38	Limitations of Hall MHD as a model for turbulence in weakly collisional plasmas. <i>Nonlinear Processes in Geophysics</i> , 2009, 16, 219-232.	0.6	42
39	Spatially localized particle energization by Landau damping in current sheets produced by strong Alfvén wave collisions. <i>Journal of Plasma Physics</i> , 2018, 84, .	0.7	41
40	ENERGY DISSIPATION AND LANDAU DAMPING IN TWO- AND THREE-DIMENSIONAL PLASMA TURBULENCE. <i>Astrophysical Journal Letters</i> , 2016, 832, L24.	3.0	37
41	A prospectus on kinetic heliophysics. <i>Physics of Plasmas</i> , 2017, 24, 055907.	0.7	37
42	Collisionless reconnection in the large guide field regime: Gyrokinetic versus particle-in-cell simulations. <i>Physics of Plasmas</i> , 2014, 21, 020708.	0.7	35
43	THE DYNAMICAL GENERATION OF CURRENT SHEETS IN ASTROPHYSICAL PLASMA TURBULENCE. <i>Astrophysical Journal Letters</i> , 2016, 827, L28.	3.0	34
44	Alfvén wave collisions, the fundamental building block of plasma turbulence. II. Numerical solution. <i>Physics of Plasmas</i> , 2013, 20, .	0.7	33
45	Characterization of turbulence in the Mars plasma environment with MAVEN observations. <i>Journal of Geophysical Research: Space Physics</i> , 2017, 122, 656-674.	0.8	30
46	Plasma Waves near the Electron Cyclotron Frequency in the Near-Sun Solar Wind. <i>Astrophysical Journal, Supplement Series</i> , 2020, 246, 21.	3.0	30
47	Gyrokinetic simulations of the tearing instability. <i>Physics of Plasmas</i> , 2011, 18, .	0.7	29
48	Diagnosing collisionless energy transfer using field- δ particle correlations: Alfvén-ion cyclotron turbulence. <i>Journal of Plasma Physics</i> , 2020, 86, .	0.7	29
49	PREDICTION OF THE PROTON-TO-TOTAL TURBULENT HEATING IN THE SOLAR WIND. <i>Astrophysical Journal</i> , 2011, 738, 40.	1.6	28
50	The inherently three-dimensional nature of magnetized plasma turbulence. <i>Journal of Plasma Physics</i> , 2015, 81, .	0.7	27
51	THE TURBULENT HEATING RATE IN STRONG MAGNETOHYDRODYNAMIC TURBULENCE WITH NONZERO CROSS HELICITY. <i>Astrophysical Journal</i> , 2009, 701, 652-657.	1.6	24
52	Alfvén wave collisions, the fundamental building block of plasma turbulence. IV. Laboratory experiment. <i>Physics of Plasmas</i> , 2013, 20, .	0.7	24
53	Gradient Particle Magnetohydrodynamics: A Lagrangian Particle Code for Astrophysical Magnetohydrodynamics. <i>Astrophysical Journal</i> , 2003, 595, 564-572.	1.6	19
54	Collisionless energy transfer in kinetic turbulence: field- δ particle correlations in Fourier space. <i>Journal of Plasma Physics</i> , 2019, 85, .	0.7	19

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55	Nonlinear energy transfer and current sheet development in localized Alfvén wavepacket collisions in the strong turbulence limit. <i>Journal of Plasma Physics</i> , 2018, 84, .	0.7	17
56	Kinetic scale density fluctuations in the solar wind. <i>AIP Conference Proceedings</i> , 2013, , .	0.3	15
57	Alfvén wave collisions, the fundamental building block of plasma turbulence. III. Theory for experimental design. <i>Physics of Plasmas</i> , 2013, 20, .	0.7	15
58	Laboratory measurements of the physics of auroral electron acceleration by Alfvén waves. <i>Nature Communications</i> , 2021, 12, 3103.	5.8	15
59	The Importance of Electron Landau Damping for the Dissipation of Turbulent Energy in Terrestrial Magnetosheath Plasma. <i>Journal of Geophysical Research: Space Physics</i> , 2021, 126, .	0.8	15
60	Electron Landau damping of kinetic Alfvén waves in simulated magnetosheath turbulence. <i>Physics of Plasmas</i> , 2020, 27, .	0.7	14
61	Solar Orbiter’s first Venus flyby: Observations from the Radio and Plasma Wave instrument. <i>Astronomy and Astrophysics</i> , 2021, 656, A18.	2.1	14
62	A field–particle correlation analysis of a perpendicular magnetized collisionless shock. <i>Journal of Plasma Physics</i> , 2021, 87, .	0.7	14
63	Howes et al. Reply. <i>Physical Review Letters</i> , 2008, 101, .	2.9	13
64	Kinetic Scale Turbulence in the Venusian Magnetosheath. <i>Geophysical Research Letters</i> , 2021, 48, e2020GL090783.	1.5	11
65	Design and use of an Elsässer probe for analysis of Alfvén wave fields according to wave direction. <i>Review of Scientific Instruments</i> , 2011, 82, 103505.	0.6	9
66	Dependence of Solar Wind Proton Temperature on the Polarization Properties of Alfvénic Fluctuations at Ion-kinetic Scales. <i>Astrophysical Journal</i> , 2021, 912, 101.	1.6	9
67	Characterizing velocity–space signatures of electron energization in large-guide-field collisionless magnetic reconnection. <i>Physics of Plasmas</i> , 2022, 29, .	0.7	9
68	Freely decaying turbulence in two-dimensional electrostatic gyrokinetics. <i>Physics of Plasmas</i> , 2012, 19, .	0.7	8
69	The development of magnetic field line wander by plasma turbulence. <i>Journal of Plasma Physics</i> , 2017, 83, .	0.7	8
70	The Alfvénic nature of energy transfer mediation in localized, strongly nonlinear Alfvén wavepacket collisions. <i>Journal of Plasma Physics</i> , 2018, 84, .	0.7	8
71	High Mach Number Quasi-Perpendicular Shocks: Spatial Versus Temporal Structure. <i>Journal of Geophysical Research: Space Physics</i> , 2021, 126, e2021JA029287.	0.8	8
72	Kinetic Turbulence. <i>Astrophysics and Space Science Library</i> , 2015, , 123-152.	1.0	8

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73	Measurements of the nonlinear beat wave produced by the interaction of counterpropagating Alfvén waves. <i>Physics of Plasmas</i> , 2016, 23, .	0.7	7
74	Direct measurement of electron sloshing of an inertial Alfvén wave. <i>Geophysical Research Letters</i> , 2016, 43, 4701-4707.	1.5	7
75	Linear theory and measurements of electron oscillations in an inertial Alfvén wave. <i>Physics of Plasmas</i> , 2017, 24, 032902.	0.7	7
76	Determining Threshold Instrumental Resolutions for Resolving the Velocity-Space Signature of Ion Landau Damping. <i>Journal of Geophysical Research: Space Physics</i> , 2021, 126, e2020JA028361.	0.8	7
77	Numerical modeling of Large Plasma Device Alfvén wave experiments using <i>AstroGK</i> . <i>Physics of Plasmas</i> , 2010, 17, .	0.7	6
78	The development of magnetic field line wander in gyrokinetic plasma turbulence: dependence on amplitude of turbulence. <i>Journal of Plasma Physics</i> , 2017, 83, .	0.7	6
79	A field-particle correlation analysis of magnetic pumping. <i>Physics of Plasmas</i> , 2022, 29, .	0.7	5
80	Observing particle energization above the Nyquist frequency: An application of the field-particle correlation technique. <i>Physics of Plasmas</i> , 2022, 29, .	0.7	5
81	PATCH: Particle Arrival Time Correlation for Heliophysics. <i>Journal of Geophysical Research: Space Physics</i> , 2021, 126, e2020JA028940.	0.8	4
82	Local Buoyant Instability of Magnetized Shear Flows. <i>Astrophysical Journal</i> , 2001, 560, 617-629.	1.6	4
83	Dissipation-scale turbulence in the solar wind. <i>AIP Conference Proceedings</i> , 2007, , .	0.3	3
84	Analysis of Magnetic Fields in Inertial Alfvén Wave Collisions. <i>IEEE Transactions on Plasma Science</i> , 2014, 42, 2534-2535.	0.6	3
85	Plasma Turbulence at Comet 67P/Churyumov-Gerasimenko: Rosetta Observations. <i>Journal of Geophysical Research: Space Physics</i> , 2020, 125, e2020JA028100.	0.8	3
86	Alfvénic oscillations of the electron distribution function: Linear theory and experimental measurements. <i>AIP Conference Proceedings</i> , 2015, , .	0.3	1
87	Revolutionizing Our Understanding of Particle Energization in Space Plasmas Using On-Board Wave-Particle Correlator Instrumentation. <i>Frontiers in Astronomy and Space Sciences</i> , 0, 9, .	1.1	1
88	Preface to Special Topic: Van Allen 100, Waves and Particles in Space and Astrophysical Plasmas. <i>Physics of Plasmas</i> , 2015, 22, 091401.	0.7	0
89	Resonant interactions of Alfvén waves and electrons in the LAPD and the acceleration of auroral electrons. , 2021, , .		0
90	Illuminating Black Holes through Turbulent Heating. <i>Physics Magazine</i> , 0, 15, .	0.1	0