Gregory G Howes

List of Publications by Year
in descending order

90 papers	5,750 citations	81900 39 h-index	74163 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. Astrophysical Journal, Supplement Series, 2009, 182, 310-377.	7.7	697
2	Highly structured slow solar wind emerging from an equatorial coronal hole. Nature, 2019, 576, 237-242.	27.8	401
3	Magnetic Fluctuation Power Near Proton Temperature Anisotropy Instability Thresholds in the Solar Wind. Physical Review Letters, 2009, 103, 211101.	7.8	371
4	A model of turbulence in magnetized plasmas: Implications for the dissipation range in the solar wind. Journal of Geophysical Research, 2008, 113, .	3.3	281
5	Astrophysical Gyrokinetics: Basic Equations and Linear Theory. Astrophysical Journal, 2006, 651, 590-614.	4.5	265
6	Kinetic Simulations of Magnetized Turbulence in Astrophysical Plasmas. Physical Review Letters, 2008, 100, 065004.	7.8	254
7	IDENTIFICATION OF KINETIC ALFVÃ‰N WAVE TURBULENCE IN THE SOLAR WIND. Astrophysical Journal Letters, 2012, 745, L9.	8.3	250
8	Gyrokinetic Simulations of Solar Wind Turbulence from Ion to Electron Scales. Physical Review Letters, 2011, 107, 035004.	7.8	205
9	THE SLOW-MODE NATURE OF COMPRESSIBLE WAVE POWER IN SOLAR WIND TURBULENCE. Astrophysical Journal Letters, 2012, 753, L19.	8.3	136
10	CURRENT SHEETS AND COLLISIONLESS DAMPING IN KINETIC PLASMA TURBULENCE. Astrophysical Journal Letters, 2013, 771, L27.	8.3	127
11	A prescription for the turbulent heating of astrophysical plasmas. Monthly Notices of the Royal Astronomical Society: Letters, 2010, 409, L104-L108.	3.3	125
12	Evidence for electron Landau damping in space plasma turbulence. Nature Communications, 2019, 10, 740.	12.8	123
13	Nonlinear Phase Mixing and Phase-Space Cascade of Entropy in Gyrokinetic Plasma Turbulence. Physical Review Letters, 2009, 103, 015003.	7.8	107
14	Gyrokinetic turbulence: a nonlinear route to dissipation through phase space. Plasma Physics and Controlled Fusion, 2008, 50, 124024.	2.1	106
15	USING SYNTHETIC SPACECRAFT DATA TO INTERPRET COMPRESSIBLE FLUCTUATIONS IN SOLAR WIND TURBULENCE. Astrophysical Journal, 2012, 755, 159.	4.5	89
16	CONSTRAINING LOW-FREQUENCY ALFVÃ‰NIC TURBULENCE IN THE SOLAR WIND USING DENSITY-FLUCTUATION MEASUREMENTS. Astrophysical Journal, 2009, 707, 1668-1675.	4.5	88
17	Multiscale Nature of the Dissipation Range in Gyrokinetic Simulations of AlfvÃ©nic Turbulence. Physical Review Letters, 2015, 115, 025003.	7.8	88
18	A weakened cascade model for turbulence in astrophysical plasmas. Physics of Plasmas, 2011, 18, .	1.9	80

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19	Evidence of critical balance in kinetic AlfvÃ©n wave turbulence simulations. Physics of Plasmas, 2012, 19, .	1.9	75
20	AlfvÃ©n wave collisions, the fundamental building block of plasma turbulence. I. Asymptotic solution. Physics of Plasmas, 2013, 20, .	1.9	72
21	COLLISIONLESS DAMPING AT ELECTRON SCALES IN SOLAR WIND TURBULENCE. Astrophysical Journal, 2013, 774, 139.	4.5	71
22	AstroGK: Astrophysical gyrokinetics code. Journal of Computational Physics, 2010, 229, 9347-9372.	3.8	70
23	A dynamical model of plasma turbulence in the solar wind. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2015, 373, 20140145.	3.4	70
24	VALIDITY OF THE TAYLOR HYPOTHESIS FOR LINEAR KINETIC WAVES IN THE WEAKLY COLLISIONAL SOLAR WIND. Astrophysical Journal, 2014, 789, 106.	4.5	67
25	Ion-scale Electromagnetic Waves in the Inner Heliosphere. Astrophysical Journal, Supplement Series, 2020, 246, 66.	7.7	67
26	ON THE INTERPRETATION OF MAGNETIC HELICITY SIGNATURES IN THE DISSIPATION RANGE OF SOLAR WIND TURBULENCE. Astrophysical Journal Letters, 2010, 709, L49-L52.	8.3	64
27	INTERPRETING MAGNETIC VARIANCE ANISOTROPY MEASUREMENTS IN THE SOLAR WIND. Astrophysical Journal, 2012, 753, 107.	4.5	64
28	MEASURING COLLISIONLESS DAMPING IN HELIOSPHERIC PLASMAS USING FIELDâ€"PARTICLE CORRELATIONS. Astrophysical Journal Letters, 2016, 826, L30.	8.3	63
29	Diagnosing collisionless energy transfer using fieldâ€"particle correlations: gyrokinetic turbulence. Journal of Plasma Physics, 2017, 83, .	2.1	61
30	Steep, transient density gradients in the Martian ionosphere similar to the ionopause at Venus. Journal of Geophysical Research, 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 GYRORADIUS SCALE. Astrophysical Journal, 2014, 785, 138.	4.5	57
32	Diagnosing collisionless energy transfer using fieldâ€"particle correlations: Vlasovâ€"Poisson plasmas. Journal of Plasma Physics, 2017, 83, .	2.1	56
33	Predicted impacts of proton temperature anisotropy on solar wind turbulence. Physics of Plasmas, 2015, 22, .	1.9	55
34	Inertial range turbulence in kinetic plasmas. Physics of Plasmas, 2008, 15, .	1.9	51
35	THE VIOLATION OF THE TAYLOR HYPOTHESIS IN MEASUREMENTS OF SOLAR WIND TURBULENCE. Astrophysical Journal Letters, 2014, 790, L20.	8.3	49
36	Laboratory space physics: Investigating the physics of space plasmas in the laboratory. Physics of Plasmas, 2018, 25, .	1.9	46

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37	Toward Astrophysical Turbulence in the Laboratory. Physical Review Letters, 2012, 109, 255001.	7.8	43
38	Limitations of Hall MHD as a model for turbulence in weakly collisional plasmas. Nonlinear Processes in Geophysics, 2009, 16, 219-232.	1.3	42
39	Spatially localized particle energization by Landau damping in current sheets produced by strong AlfvÃ©nÂwave collisions. Journal of Plasma Physics, 2018, 84, .	2.1	41
40	ENERGY DISSIPATION AND LANDAU DAMPING IN TWO- AND THREE-DIMENSIONAL PLASMA TURBULENCE. Astrophysical Journal Letters, 2016, 832, L24.	8.3	37
41	A prospectus on kinetic heliophysics. Physics of Plasmas, 2017, 24, 055907.	1.9	37
42	Collisionless reconnection in the large guide field regime: Gyrokinetic versus particle-in-cell simulations. Physics of Plasmas, 2014, 21, 020708.	1.9	35
43	THE DYNAMICAL GENERATION OF CURRENT SHEETS IN ASTROPHYSICAL PLASMA TURBULENCE. Astrophysical Journal Letters, 2016, 827, L28.	8.3	34
44	AlfvÃ©n wave collisions, the fundamental building block of plasma turbulence. II. Numerical solution. Physics of Plasmas, 2013, 20, .	1.9	33
45	Characterization of turbulence in the Mars plasma environment with MAVEN observations. Journal of Geophysical Research: Space Physics, 2017, 122, 656-674.	2.4	30
46	Plasma Waves near the Electron Cyclotron Frequency in the Near-Sun Solar Wind. Astrophysical Journal, Supplement Series, 2020, 246, 21.	7.7	30
47	Gyrokinetic simulations of the tearing instability. Physics of Plasmas, 2011, 18, .	1.9	29
48	Diagnosing collisionless energy transfer using fieldâ€"particle correlations: AlfvÃ©n-ion cyclotronÂturbulence. Journal of Plasma Physics, 2020, 86, .	2.1	29
49	PREDICTION OF THE PROTON-TO-TOTAL TURBULENT HEATING IN THE SOLAR WIND. Astrophysical Journal, 2011, 738, 40.	4.5	28
50	The inherently three-dimensional nature of magnetized plasma turbulence. Journal of Plasma Physics, 2015, 81, .	2.1	27
51	THE TURBULENT HEATING RATE IN STRONG MAGNETOHYDRODYNAMIC TURBULENCE WITH NONZERO CROSS HELICITY. Astrophysical Journal, 2009, 701, 652-657.	4.5	24
52	AlfvÃ©n wave collisions, the fundamental building block of plasma turbulence. IV. Laboratory experiment. Physics of Plasmas, 2013, 20, .	1.9	24
53	Gradient Particle Magnetohydrodynamics: A Lagrangian Particle Code for Astrophysical Magnetohydrodynamics. Astrophysical Journal, 2003, 595, 564-572.	4.5	19
54	Collisionless energy transfer in kinetic turbulence: fieldâ€"particle correlations in FourierÂspace. Journal of Plasma Physics, 2019, 85, .	2.1	19

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55	Nonlinear energy transfer and current sheet development in localized AlfvÃ©n wavepacket collisions in the strong turbulence limit. Journal of Plasma Physics, 2018, 84, .	2.1	17
56	Kinetic scale density fluctuations in the solar wind. AIP Conference Proceedings, 2013, , .	0.4	15
57	AlfvÃ©n wave collisions, the fundamental building block of plasma turbulence. III. Theory for experimental design. Physics of Plasmas, 2013, 20, .	1.9	15
58	Laboratory measurements of the physics of auroral electron acceleration by AlfvÃ©n waves. Nature Communications, 2021, 12, 3103.	12.8	15
59	The Importance of Electron Landau Damping for the Dissipation of Turbulent Energy in Terrestrial Magnetosheath Plasma. Journal of Geophysical Research: Space Physics, 2021, 126, .	2.4	15
60	Electron Landau damping of kinetic AlfvÃ©n waves in simulated magnetosheath turbulence. Physics of Plasmas, 2020, 27, .	1.9	14
61	Solar Orbiterâ€™s first Venus flyby: Observations from the Radio and Plasma Wave instrument. Astronomy and Astrophysics, 2021, 656, A18.	5.1	14
62	A fieldâ€“particle correlation analysis of a perpendicular magnetized collisionless shock. Journal of Plasma Physics, 2021, 87, .	2.1	14
63	Howes<i>etÂal.</i>Reply:. Physical Review Letters, 2008, 101, .	7.8	13
64	Kineticâ€Scale Turbulence in the Venusian Magnetosheath. Geophysical Research Letters, 2021, 48, e2020GL090783.	4.0	11
65	Design and use of an ElsÃ̈sser probe for analysis of AlfvÃ©n wave fields according to wave direction. Review of Scientific Instruments, 2011, 82, 103505.	1.3	9
66	Dependence of Solar Wind Proton Temperature on the Polarization Properties of AlfvÃ©nic Fluctuations at Ion-kinetic Scales. Astrophysical Journal, 2021, 912, 101.	4.5	9
67	Characterizing velocityâ€“space signatures of electron energization in large-guide-field collisionless magnetic reconnection. Physics of Plasmas, 2022, 29, .	1.9	9
68	Freely decaying turbulence in two-dimensional electrostatic gyrokinetics. Physics of Plasmas, 2012, 19, .	1.9	8
69	The development of magnetic field line wander by plasma turbulence. Journal of Plasma Physics, 2017, 83, .	2.1	8
70	The AlfvÃ©nic nature of energy transfer mediation in localized, strongly nonlinear AlfvÃ©n wavepacket collisions. Journal of Plasma Physics, 2018, 84, .	2.1	8
71	High Mach Number Quasiâ€Perpendicular Shocks: Spatial Versus Temporal Structure. Journal of Geophysical Research: Space Physics, 2021, 126, e2021JA029287.	2.4	8
72	Kinetic Turbulence. Astrophysics and Space Science Library, 2015, , 123-152.	2.7	8

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73	Measurements of the nonlinear beat wave produced by the interaction of counterpropagating AlfvÃ©n waves. Physics of Plasmas, 2016, 23, .	1.9	7
74	Direct measurement of electron sloshing of an inertial AlfvÃ©n wave. Geophysical Research Letters, 2016, 43, 4701-4707.	4.0	7
75	Linear theory and measurements of electron oscillations in an inertial AlfvÃ©n wave. Physics of Plasmas, 2017, 24, 032902.	1.9	7
76	Determining Threshold Instrumental Resolutions for Resolving the Velocityâ€Space Signature of Ion Landau Damping. Journal of Geophysical Research: Space Physics, 2021, 126, e2020JA028361.	2.4	7
77	Numerical modeling of Large Plasma Device AlfvÃ©n wave experiments using <tt>AstroGK</tt>. Physics of Plasmas, 2010, 17, .	1.9	6
78	The development of magnetic field line wander in gyrokinetic plasma turbulence: dependence on amplitude of turbulence. Journal of Plasma Physics, 2017, 83, .	2.1	6
79	A field-particle correlation analysis of magnetic pumping. Physics of Plasmas, 2022, 29, .	1.9	5
80	Observing particle energization above the Nyquist frequency: An application of the field-particle correlation technique. Physics of Plasmas, 2022, 29, .	1.9	5
81	PATCH: Particle Arrival Time Correlation for Heliophysics. Journal of Geophysical Research: Space Physics, 2021, 126, e2020JA028940.	2.4	4
82	Local Buoyant Instability of Magnetized Shear Flows. Astrophysical Journal, 2001, 560, 617-629.	4.5	4
83	Dissipation-scale turbulence in the solar wind. AIP Conference Proceedings, 2007, , .	0.4	3
84	Analysis of Magnetic Fields in Inertial AlfvÃ©n Wave Collisions. IEEE Transactions on Plasma Science, 2014, 42, 2534-2535.	1.3	3
85	Plasma Turbulence at Comet 67P/Churyumovâ€Gerasimenko: Rosetta Observations. Journal of Geophysical Research: Space Physics, 2020, 125, e2020JA028100.	2.4	3
86	AlfvÃ©nic oscillations of the electron distribution function: Linear theory and experimental measurements. AIP Conference Proceedings, 2015, , .	0.4	1
87	Revolutionizing Our Understanding of Particle Energization in Space Plasmas Using On-Board Wave-Particle Correlator Instrumentation. Frontiers in Astronomy and Space Sciences, 0, 9, .	2.8	1
88	Preface to Special Topic: Van Allen 100, Waves and Particles in Space and Astrophysical Plasmas. Physics of Plasmas, 2015, 22, 091401.	1.9	0
89	Resonant interactions of AlfvÃ©n waves and electrons in the LAPD and the acceleration of auroral electrons. , 2021, , .		0
90	Illuminating Black Holes through Turbulent Heating. Physics Magazine, 0, 15, .	0.1	0