Paul A Cassak

List of Publications by Year
in descending order

117 papers	5,885 citations	61984 43 h-index	79698 73 g-index
121 all docs	121 docs citations	121 times ranked	2358 citing authors

#	Article	IF	Citations
1	Electron-scale measurements of magnetic reconnection in space. Science, 2016, 352, aaf2939.	12.6	545
2	Scaling of asymmetric magnetic reconnection: General theory and collisional simulations. Physics of Plasmas, 2007, 14, .	1.9	401
3	Electron magnetic reconnection without ion coupling in Earthâ€™s turbulent magnetosheath. Nature, 2018, 557, 202-206.	27.8	263
4	Magnetic Reconnection in Two-Dimensional Magnetohydrodynamic Turbulence. Physical Review Letters, 2009, 102, 115003.	7.8	205
5	A MAGNETIC RECONNECTION MECHANISM FOR ION ACCELERATION AND ABUNDANCE ENHANCEMENTS IN IMPULSIVE FLARES. Astrophysical Journal, 2009, 700, L16-L20.	4.5	153
6	Ion heating resulting from pickup in magnetic reconnection exhausts. Journal of Geophysical Research, 2009, 114, .	3.3	151
7	Catastrophe Model for Fast Magnetic Reconnection Onset. Physical Review Letters, 2005, 95, 235002.	7.8	144
8	Statistics of magnetic reconnection in two-dimensional magnetohydrodynamic turbulence. Physics of Plasmas, 2010, 17, .	1.9	113
9	Why does Steady-State Magnetic Reconnection have a Maximum Local Rate of Order 0.1?. Physical Review Letters, 2017, 118, 085101.	7.8	112
10	Kinetic dissipation and anisotropic heating in a turbulent collisionless plasma. Physics of Plasmas, 2009, 16, .	1.9	109
11	Kinetic signatures of the region surrounding the X line in asymmetric (magnetopause) reconnection. Geophysical Research Letters, 2016, 43, 4145-4154.	4.0	106
12	Scaling of Sweetâ€“Parker reconnection with secondary islands. Physics of Plasmas, 2009, 16, 120702.	1.9	104
13	MMS observations of electronâ€scale filamentary currents in the reconnection exhaust and near the X line. Geophysical Research Letters, 2016, 43, 6060-6069.	4.0	99
14	Magnetic reconnection as an element of turbulence. Nonlinear Processes in Geophysics, 2011, 18, 675-695.	1.3	96
15	Ionâ€scale secondary flux ropes generated by magnetopause reconnection as resolved by MMS. Geophysical Research Letters, 2016, 43, 4716-4724.	4.0	95
16	A review of the 0.1 reconnection rate problem. Journal of Plasma Physics, 2017, 83, .	2.1	93
17	Currents and associated electron scattering and bouncing near the diffusion region at Earth's magnetopause. Geophysical Research Letters, 2016, 43, 3042-3050.	4.0	81
18	The effects of turbulence on threeâ€dimensional magnetic reconnection at the magnetopause. Geophysical Research Letters, 2016, 43, 6020-6027.	4.0	80

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19	Electron heating during magnetic reconnection: A simulation scaling study. Physics of Plasmas, 2014, 21, .	1.9	74
20	Magnetospheric Multiscale Observations of the Electron Diffusion Region of Large Guide Field Magnetic Reconnection. Physical Review Letters, 2016, 117, 015001.	7.8	74
21	Comparison of Secondary Islands in Collisional Reconnection to Hall Reconnection. Physical Review Letters, 2010, 105, 015004.	7.8	73
22	A Model for Spontaneous Onset of Fast Magnetic Reconnection. Astrophysical Journal, 2006, 644, L145-L148.	4.5	72
23	Onset of Fast Magnetic Reconnection. Physical Review Letters, 2007, 98, 215001.	7.8	69
24	Magnetic Reconnection, Turbulence, and Particle Acceleration: Observations in the Earth's Magnetotail. Geophysical Research Letters, 2018, 45, 3338-3347.	4.0	69
25	Magnetospheric Multiscale observations of largeâ€amplitude, parallel, electrostatic waves associated with magnetic reconnection at the magnetopause. Geophysical Research Letters, 2016, 43, 5626-5634.	4.0	66
26	Magnetic Reconnection in the Space Sciences: Past, Present, and Future. Journal of Geophysical Research: Space Physics, 2020, 125, e2018JA025935.	2.4	65
27	Global Threeâ€Dimensional Simulation of Earth's Dayside Reconnection Using a Twoâ€Way Coupled Magnetohydrodynamics With Embedded Particleâ€inâ€Cell Model: Initial Results. Journal of Geophysical Research: Space Physics, 2017, 122, 10,318.	2.4	62
28	Scaling of asymmetric magnetic reconnection: Kinetic particleâ€inâ€cell simulations. Journal of Geophysical Research, 2010, 115, .	3.3	61
29	Magnetospheric Multiscale Satellites Observations of Parallel Electric Fields Associated with Magnetic Reconnection. Physical Review Letters, 2016, 116, 235102.	7.8	61
30	Transition from ion-coupled to electron-only reconnection: Basic physics and implications for plasma turbulence. Physics of Plasmas, 2019, 26, .	1.9	61
31	Scaling of asymmetric Hall magnetic reconnection. Geophysical Research Letters, 2008, 35, .	4.0	54
32	Reconnection rates and X line motion at the magnetopause: Global 2Dâ€3V hybridâ€Vlasov simulation results. Journal of Geophysical Research: Space Physics, 2017, 122, 2877-2888.	2.4	51
33	On the 3â€D structure and dissipation of reconnectionâ€driven flow bursts. Geophysical Research Letters, 2014, 41, 3710-3716.	4.0	50
34	Structure of the dissipation region in fluid simulations of asymmetric magnetic reconnection. Physics of Plasmas, 2009, 16, 055704.	1.9	48
35	Largeâ€scale characteristics of reconnection diffusion regions and associated magnetopause crossings observed by MMS. Journal of Geophysical Research: Space Physics, 2017, 122, 5466-5486.	2.4	48
36	Scaling the Ion Inertial Length and Its Implications for Modeling Reconnection in Global Simulations. Journal of Geophysical Research: Space Physics, 2017, 122, 10,336.	2.4	48

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37	From Solar and Stellar Flares to Coronal Heating: Theory and Observations of How Magnetic Reconnection Regulates Coronal Conditions. Astrophysical Journal, 2008, 676, L69-L72.	4.5	46
38	Magnetic Reconnection for Coronal Conditions: Reconnection Rates, Secondary Islands and Onset. Space Science Reviews, 2012, 172, 283-302.	8.1	46
39	Asymmetric magnetic reconnection with a flow shear and applications to the magnetopause. Journal of Geophysical Research: Space Physics, 2015, 120, 7748-7763.	2.4	46
40	Comparative analysis of dayside magnetic reconnection models in global magnetosphere simulations. Journal of Geophysical Research: Space Physics, 2015, 120, 276-294.	2.4	46
41	Drift waves, intense parallel electric fields, and turbulence associated with asymmetric magnetic reconnection at the magnetopause. Geophysical Research Letters, 2017, 44, 2978-2986.	4.0	46
42	Catastrophic onset of fast magnetic reconnection with a guide field. Physics of Plasmas, 2007, 14, 054502.	1.9	45
43	The Effect of a Guide Field on Local Energy Conversion During Asymmetric Magnetic Reconnection: MMS Observations. Journal of Geophysical Research: Space Physics, 2017, 122, 11,342.	2.4	45
44	Magnetospheric ion influence on magnetic reconnection at the duskside magnetopause. Geophysical Research Letters, 2016, 43, 1435-1442.	4.0	42
45	Spacecraft Observations and Analytic Theory of Crescent-Shaped Electron Distributions in Asymmetric Magnetic Reconnection. Physical Review Letters, 2016, 117, 185101.	7.8	42
46	Elongation of Flare Ribbons. Astrophysical Journal, 2017, 838, 17.	4.5	42
47	Guide field dependence of 3â€Ð Xâ€line spreading during collisionless magnetic reconnection. Journal of Geophysical Research, 2012, 117, .	3.3	41
48	New Electric Field in Asymmetric Magnetic Reconnection. Physical Review Letters, 2013, 111, 135001.	7.8	41
49	Localized Oscillatory Energy Conversion in Magnetopause Reconnection. Geophysical Research Letters, 2018, 45, 1237-1245.	4.0	41
50	Scaling of the magnetic reconnection rate with symmetric shear flow. Physics of Plasmas, 2011, 18, .	1.9	40
51	Reconnection at Earthâ€™s Dayside Magnetopause. Astrophysics and Space Science Library, 2016, , 213-276.	2.7	38
52	Turbulence in Threeâ€Ðimensional Simulations of Magnetopause Reconnection. Journal of Geophysical Research: Space Physics, 2017, 122, 11,086.	2.4	37
53	Tracing magnetic separators and their dependence on IMF clock angle in global magnetospheric simulations. Journal of Geophysical Research: Space Physics, 2013, 118, 4998-5007.	2.4	36
54	Reconnection events in two-dimensional Hall magnetohydrodynamic turbulence. Physics of Plasmas, 2012, 19, .	1.9	35

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55	Separator reconnection at the magnetopause for predominantly northward and southward IMF: Techniques and results. Journal of Geophysical Research: Space Physics, 2016, 121, 140-156.	2.4	34
56	MMS Observation of Asymmetric Reconnection Supported by 3â€Ð Electron Pressure Divergence. Journal of Geophysical Research: Space Physics, 2018, 123, 1806-1821.	2.4	34
57	Model for Incomplete Reconnection in Sawtooth Crashes. Physical Review Letters, 2011, 107, 255002.	7.8	33
58	THE IMPACT OF MICROSCOPIC MAGNETIC RECONNECTION ON PRE-FLARE ENERGY STORAGE. Astrophysical Journal, 2009, 707, L158-L162.	4.5	32
59	Kinetic simulation of asymmetric magnetic reconnection with cold ions. Journal of Geophysical Research: Space Physics, 2017, 122, 5290-5306.	2.4	29
60	Dissipation measures in weakly collisional plasmas. Monthly Notices of the Royal Astronomical Society, 2021, 505, 4857-4873.	4.4	29
61	On phase diagrams of magnetic reconnection. Physics of Plasmas, 2013, 20, .	1.9	27
62	Reconstruction of the electron diffusion region observed by the Magnetospheric Multiscale spacecraft: First results. Geophysical Research Letters, 2017, 44, 4566-4574.	4.0	27
63	The Effect of a Guide Field on Local Energy Conversion During Asymmetric Magnetic Reconnection: Particleâ€inâ€Cell Simulations. Journal of Geophysical Research: Space Physics, 2017, 122, 11,523.	2.4	27
64	Particle Acceleration in Strong Turbulence in the Earthâ€™s Magnetotail. Astrophysical Journal, 2020, 898, 153.	4.5	27
65	ON THE CAUSE OF SUPRA-ARCADE DOWNFLOWS IN SOLAR FLARES. Astrophysical Journal Letters, 2013, 775, L14.	8.3	26
66	Localized and Intense Energy Conversion in the Diffusion Region of Asymmetric Magnetic Reconnection. Geophysical Research Letters, 2018, 45, 5260-5267.	4.0	26
67	Theory and simulations of the scaling of magnetic reconnection with symmetric shear flow. Physics of Plasmas, 2011, 18, .	1.9	25
68	Properties of Magnetic Reconnection and FTEs on the Dayside Magnetopause With and Without Positive IMF B_x Component During Southward IMF. Journal of Geophysical Research: Space Physics, 2019, 124, 4037-4048.	2.4	25
69	The hall effect in magnetic reconnection: Hybrid versus Hallâ€less hybrid simulations. Geophysical Research Letters, 2009, 36, .	4.0	24
70	Magnetic reconnection with asymmetry in the outflow direction. Journal of Geophysical Research, 2010, 115, .	3.3	24
71	Fast magnetic reconnection due to anisotropic electron pressure. Physics of Plasmas, 2015, 22, .	1.9	24
72	Electron Inflow Velocities and Reconnection Rates at Earth's Magnetopause and Magnetosheath. Geophysical Research Letters, 2020, 47, e2020GL089082.	4.0	23

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73	Observations of Hall Reconnection Physics Far Downstream of the <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi>X</mml:mi></mml:mrow></mml:math> Line. Physical Review Letters, 2016, 117, 185102.	7.8	22
74	Three-dimensional simulations of the orientation and structure of reconnection X-lines. Physics of Plasmas, 2010, 17, .	1.9	21
75	A saddle-node bifurcation model of magnetic reconnection onset. Physics of Plasmas, 2010, 17, .	1.9	21
76	Inside the Black Box: Magnetic Reconnection and the Magnetospheric Multiscale Mission. Space Weather, 2016, 14, 186-197.	3.7	21
77	Ion Larmor radius effects near a reconnection X line at the magnetopause: THEMIS observations and simulation comparison. Geophysical Research Letters, 2016, 43, 8844-8852.	4.0	21
78	Observational Evidence of Largeâ€Scale Multiple Reconnection at the Earth's Dayside Magnetopause. Journal of Geophysical Research: Space Physics, 2018, 123, 8407-8421.	2.4	21
79	Spacecraft Observations of Oblique Electron Beams Breaking the Frozen-In Law During Asymmetric Reconnection. Physical Review Letters, 2018, 120, 055101.	7.8	20
80	The reduction of magnetic reconnection outflow jets to sub-AlfvÃ©nic speeds. Physics of Plasmas, 2018, 25, .	1.9	20
81	Decomposition of plasma kinetic entropy into position and velocity space and the use of kinetic entropy in particle-in-cell simulations. Physics of Plasmas, 2019, 26, .	1.9	20
82	First-principles theory of the rate of magnetic reconnection in magnetospheric and solar plasmas. Communications Physics, 2022, 5, .	5.3	20
83	MMS Measurements of the Vlasov Equation: Probing the Electron Pressure Divergence Within Thin Current Sheets. Geophysical Research Letters, 2019, 46, 7862-7872.	4.0	19
84	Measurements of structural and quadrupole coupling parameters for bromoferrocene using microwave spectroscopy. Journal of Chemical Physics, 1997, 107, 6541-6548.	3.0	18
85	Magnetic Reconnection in Three Dimensions: Modeling and Analysis of Electromagnetic Drift Waves in the Adjacent Current Sheet. Journal of Geophysical Research: Space Physics, 2019, 124, 10085-10103.	2.4	18
86	Observation of a retreating x line and magnetic islands poleward of the cusp during northward interplanetary magnetic field conditions. Journal of Geophysical Research: Space Physics, 2014, 119, 9643-9657.	2.4	17
87	Transition from global to local control of dayside reconnection from ionosphericâ€sourced mass loading. Journal of Geophysical Research: Space Physics, 2017, 122, 9474-9488.	2.4	17
88	MMS Multiâ€Point Analysis of FTE Evolution: Physical Characteristics and Dynamics. Journal of Geophysical Research: Space Physics, 2019, 124, 5376-5395.	2.4	17
89	Energy Flux Densities near the Electron Dissipation Region in Asymmetric Magnetopause Reconnection. Physical Review Letters, 2020, 125, 265102.	7.8	17
90	On the Collisionless Asymmetric Magnetic Reconnection Rate. Geophysical Research Letters, 2018, 45, 3311-3318.	4.0	15

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91	Structures in the terms of the Vlasov equation observed at Earthâ€™s magnetopause. Nature Physics, 2021, 17, 1056-1065.	16.7	15
92	Laboratory Observations of Electron Heating and Non-Maxwellian Distributions at the Kinetic Scale during Electron-Only Magnetic Reconnection. Physical Review Letters, 2022, 128, 025002.	7.8	15
93	Determination of structural parameters for the half-sandwich compounds cyclopentadienyl thallium and cyclopentadienyl indium and indium quadrupole coupling for cyclopentadienyl indium using microwave spectroscopy. Journal of Chemical Physics, 1997, 107, 3766-3773.	3.0	14
94	Space physics and policy for contemporary society. Journal of Geophysical Research: Space Physics, 2017, 122, 4430-4435.	2.4	14
95	Stationarity of the Reconnection Xâ€Line at Earth's Magnetopause for Southward IMF. Journal of Geophysical Research: Space Physics, 2019, 124, 8524-8534.	2.4	14
96	Kinetic entropy-based measures of distribution function non-Maxwellianity: theory and simulations. Journal of Plasma Physics, 2020, 86, .	2.1	13
97	Faster Form of Electron Magnetic Reconnection with a Finite Length X-Line. Physical Review Letters, 2021, 127, 155101.	7.8	13
98	The local dayside reconnection rate for oblique interplanetary magnetic fields. Journal of Geophysical Research: Space Physics, 2016, 121, 5105-5120.	2.4	12
99	The Transition Between Antiparallel and Component Magnetic Reconnection at Earth's Dayside Magnetopause. Journal of Geophysical Research: Space Physics, 2018, 123, 10,177.	2.4	12
100	Cavitons and spontaneous hot flow anomalies in a hybrid-Vlasov global magnetospheric simulation. Annales Geophysicae, 2018, 36, 1081-1097.	1.6	12
101	Microwave measurements of rhenium quadrupole coupling in cyclopentadienyl rhenium tricarbonyl. Journal of Chemical Physics, 1998, 108, 8878-8883.	3.0	10
102	Measurements of Structural and Quadrupolar Coupling Parameters for Chloroferrocene Using Microwave Spectroscopy. Inorganic Chemistry, 1997, 36, 2868-2871.	4.0	9
103	Superâ€AlfvÃ©nic Propagation and Damping of Reconnection Onset Signatures. Journal of Geophysical Research: Space Physics, 2018, 123, 341-349.	2.4	9
104	Particle-in-cell simulation study of the scaling of asymmetric magnetic reconnection with in-plane flow shear. Physics of Plasmas, 2016, 23, 082107.	1.9	8
105	Stable reconnection at the dusk flank magnetopause. Geophysical Research Letters, 2016, 43, 9374-9382.	4.0	7
106	Subsolar magnetopause observation and kinetic simulation of a tripolar guide magnetic field perturbation consistent with a magnetic island. Geophysical Research Letters, 2016, 43, 3035-3041.	4.0	7
107	Theory, observations, and simulations of kinetic entropy in a magnetotail electron diffusion region. Physics of Plasmas, 2022, 29, .	1.9	7
108	Electron-only reconnection and associated electron heating and acceleration in PHASMA. Physics of Plasmas, 2022, 29, .	1.9	7

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109	Assessing the Time Dependence of Reconnection With Poynting's Theorem: MMS Observations. Geophysical Research Letters, 2018, 45, 2886-2892.	4.0	6
110	Structure of Exhausts in Magnetic Reconnection with an X-line of Finite Extent. Astrophysical Journal, 2017, 848, 90.	4.5	5
111	Estimating Effective Collision Frequency and Kinetic Entropy Uncertainty in Particle-in-Cell Simulations. Journal of Physics: Conference Series, 2020, 1620, 012009.	0.4	5
112	ESTIMATES OF DENSITIES AND FILLING FACTORS FROM A COOLING TIME ANALYSIS OF SOLAR MICROFLARES OBSERVED WITHRHESSI. Astrophysical Journal, 2011, 736, 75.	4.5	3
113	Nascent Flux Rope Observations at Earth's Dayside Magnetopause. Journal of Geophysical Research: Space Physics, 2020, 125, e2020JA027919.	2.4	3
114	Scaling theory of three-dimensional magnetic reconnection spreading. Physics of Plasmas, 2021, 28, .	1.9	3
115	Response to â€œComment on â€˜Scaling of asymmetric magnetic reconnection: General theory and collisional simulationsâ€™â€‰â€•[Phys. Plasmas 16, 034701 (2009)]. Physics of Plasmas, 2009, 16, 034702.	1.9	2
116	Effects of a Guide Field on the Larmor Electric Field and Upstream Electron Temperature Anisotropy in Collisionless Asymmetric Magnetic Reconnection. Astrophysical Journal, 2017, 845, 113.	4.5	2
117	Overview on numerical studies of reconnection and dissipation in the solar wind. , 2013, , .		0