

# Paul A Cassak

## List of Publications by Year in descending order

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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  | Laboratory Observations of Electron Heating and Non-Maxwellian Distributions at the Kinetic Scale during Electron-Only Magnetic Reconnection. <i>Physical Review Letters</i> , 2022, 128, 025002. | 7.8  | 15        |
| 2  | Theory, observations, and simulations of kinetic entropy in a magnetotail electron diffusion region. <i>Physics of Plasmas</i> , 2022, 29, .  | 1.9  | 7         |
| 3  | Electron-only reconnection and associated electron heating and acceleration in PHASMA. <i>Physics of Plasmas</i> , 2022, 29, .  | 1.9  | 7         |
| 4  | First-principles theory of the rate of magnetic reconnection in magnetospheric and solar plasmas. <i>Communications Physics</i> , 2022, 5, .  | 5.3  | 20        |
| 5  | Dissipation measures in weakly collisional plasmas. <i>Monthly Notices of the Royal Astronomical Society</i> , 2021, 505, 4857-4873.  | 4.4  | 29        |
| 6  | Structures in the terms of the Vlasov equation observed at Earth's magnetopause. <i>Nature Physics</i> , 2021, 17, 1056-1065.   | 16.7 | 15        |
| 7  | Scaling theory of three-dimensional magnetic reconnection spreading. <i>Physics of Plasmas</i> , 2021, 28, .  | 1.9  | 3         |
| 8  | Faster Form of Electron Magnetic Reconnection with a Finite Length X-Line. <i>Physical Review Letters</i> , 2021, 127, 155101.  | 7.8  | 13        |
| 9  | Kinetic entropy-based measures of distribution function non-Maxwellianity: theory and simulations. <i>Journal of Plasma Physics</i> , 2020, 86, .   | 2.1  | 13        |
| 10 | Estimating Effective Collision Frequency and Kinetic Entropy Uncertainty in Particle-in-Cell Simulations. <i>Journal of Physics: Conference Series</i> , 2020, 1620, 012009.                      | 0.4  | 5         |
| 11 | Nascent Flux Rope Observations at Earth's Dayside Magnetopause. <i>Journal of Geophysical Research: Space Physics</i> , 2020, 125, e2020JA027919.   | 2.4  | 3         |
| 12 | Electron Inflow Velocities and Reconnection Rates at Earth's Magnetopause and Magnetosheath. <i>Geophysical Research Letters</i> , 2020, 47, e2020GL089082.                                       | 4.0  | 23        |
| 13 | Magnetic Reconnection in the Space Sciences: Past, Present, and Future. <i>Journal of Geophysical Research: Space Physics</i> , 2020, 125, e2018JA025935.   | 2.4  | 65        |
| 14 | Energy Flux Densities near the Electron Dissipation Region in Asymmetric Magnetopause Reconnection. <i>Physical Review Letters</i> , 2020, 125, 265102.   | 7.8  | 17        |
| 15 | Particle Acceleration in Strong Turbulence in the Earth's Magnetotail. <i>Astrophysical Journal</i> , 2020, 898, 153.   | 4.5  | 27        |
| 16 | MMS Multi-Point Analysis of FTE Evolution: Physical Characteristics and Dynamics. <i>Journal of Geophysical Research: Space Physics</i> , 2019, 124, 5376-5395.                                   | 2.4  | 17        |
| 17 | Decomposition of plasma kinetic entropy into position and velocity space and the use of kinetic entropy in particle-in-cell simulations. <i>Physics of Plasmas</i> , 2019, 26, .                  | 1.9  | 20        |
| 18 | Transition from ion-coupled to electron-only reconnection: Basic physics and implications for plasma turbulence. <i>Physics of Plasmas</i> , 2019, 26, .  | 1.9  | 61        |

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|----|--|------|-----------|
| 19 | MMS Measurements of the Vlasov Equation: Probing the Electron Pressure Divergence Within Thin Current Sheets. <i>Geophysical Research Letters</i> , 2019, 46, 7862-7872.   | 4.0  | 19        |
| 20 | Properties of Magnetic Reconnection and FTEs on the Dayside Magnetopause With and Without Positive IMF $\langle i \rangle B_x \langle i \rangle$ Component During Southward IMF. <i>Journal of Geophysical Research: Space Physics</i> , 2019, 124, 4037-4048. | 2.4  | 25        |
| 21 | Stationarity of the Reconnection X-Line at Earth's Magnetopause for Southward IMF. <i>Journal of Geophysical Research: Space Physics</i> , 2019, 124, 8524-8534.   | 2.4  | 14        |
| 22 | Magnetic Reconnection in Three Dimensions: Modeling and Analysis of Electromagnetic Drift Waves in the Adjacent Current Sheet. <i>Journal of Geophysical Research: Space Physics</i> , 2019, 124, 10085-10103.   | 2.4  | 18        |
| 23 | Magnetic Reconnection, Turbulence, and Particle Acceleration: Observations in the Earth's Magnetotail. <i>Geophysical Research Letters</i> , 2018, 45, 3338-3347.  | 4.0  | 69        |
| 24 | Assessing the Time Dependence of Reconnection With Poynting's Theorem: MMS Observations. <i>Geophysical Research Letters</i> , 2018, 45, 2886-2892.  | 4.0  | 6         |
| 25 | Spacecraft Observations of Oblique Electron Beams Breaking the Frozen-In Law During Asymmetric Reconnection. <i>Physical Review Letters</i> , 2018, 120, 055101.   | 7.8  | 20        |
| 26 | MMS Observation of Asymmetric Reconnection Supported by $\nabla \cdot \mathbf{E}$ Electron Pressure Divergence. <i>Journal of Geophysical Research: Space Physics</i> , 2018, 123, 1806-1821.  | 2.4  | 34        |
| 27 | Localized Oscillatory Energy Conversion in Magnetopause Reconnection. <i>Geophysical Research Letters</i> , 2018, 45, 1237-1245.   | 4.0  | 41        |
| 28 | On the Collisionless Asymmetric Magnetic Reconnection Rate. <i>Geophysical Research Letters</i> , 2018, 45, 3311-3318.   | 4.0  | 15        |
| 29 | Super-Alfvénic Propagation and Damping of Reconnection Onset Signatures. <i>Journal of Geophysical Research: Space Physics</i> , 2018, 123, 341-349.   | 2.4  | 9         |
| 30 | The Transition Between Antiparallel and Component Magnetic Reconnection at Earth's Dayside Magnetopause. <i>Journal of Geophysical Research: Space Physics</i> , 2018, 123, 10,177.  | 2.4  | 12        |
| 31 | Cavitons and spontaneous hot flow anomalies in a hybrid-Vlasov global magnetospheric simulation. <i>Annales Geophysicae</i> , 2018, 36, 1081-1097.   | 1.6  | 12        |
| 32 | Observational Evidence of Large-scale Multiple Reconnection at the Earth's Dayside Magnetopause. <i>Journal of Geophysical Research: Space Physics</i> , 2018, 123, 8407-8421.   | 2.4  | 21        |
| 33 | The reduction of magnetic reconnection outflow jets to sub-Alfvénic speeds. <i>Physics of Plasmas</i> , 2018, 25, .  | 1.9  | 20        |
| 34 | Localized and Intense Energy Conversion in the Diffusion Region of Asymmetric Magnetic Reconnection. <i>Geophysical Research Letters</i> , 2018, 45, 5260-5267.  | 4.0  | 26        |
| 35 | Electron magnetic reconnection without ion coupling in Earth's turbulent magnetosheath. <i>Nature</i> , 2018, 557, 202-206.  | 27.8 | 263       |
| 36 | Reconnection rates and X line motion at the magnetopause: Global 2D hybrid-Vlasov simulation results. <i>Journal of Geophysical Research: Space Physics</i> , 2017, 122, 2877-2888.  | 2.4  | 51        |

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|----|--|-----|-----------|
| 37 | Why does Steady-State Magnetic Reconnection have a Maximum Local Rate of Order 0.1?. Physical Review Letters, 2017, 118, 085101.   | 7.8 | 112       |
| 38 | Kinetic simulation of asymmetric magnetic reconnection with cold ions. Journal of Geophysical Research: Space Physics, 2017, 122, 5290-5306.   | 2.4 | 29        |
| 39 | Large-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        |
| 40 | Reconstruction of the electron diffusion region observed by the Magnetospheric Multiscale spacecraft: First results. Geophysical Research Letters, 2017, 44, 4566-4574.  | 4.0 | 27        |
| 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 | Elongation of Flare Ribbons. Astrophysical Journal, 2017, 838, 17.   | 4.5 | 42        |
| 43 | Structure of Exhausts in Magnetic Reconnection with an X-line of Finite Extent. Astrophysical Journal, 2017, 848, 90.  | 4.5 | 5         |
| 44 | Turbulence in Three-Dimensional Simulations of Magnetopause Reconnection. Journal of Geophysical Research: Space Physics, 2017, 122, 11,086.   | 2.4 | 37        |
| 45 | 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        |
| 46 | 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         |
| 47 | A review of the 0.1 reconnection rate problem. Journal of Plasma Physics, 2017, 83, .  | 2.1 | 93        |
| 48 | Global Three-Dimensional Simulation of Earth's Dayside Reconnection Using a Two-Way Coupled Magnetohydrodynamics With Embedded Particle-in-Cell Model: Initial Results. Journal of Geophysical Research: Space Physics, 2017, 122, 10,318. | 2.4 | 62        |
| 49 | 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        |
| 50 | Space physics and policy for contemporary society. Journal of Geophysical Research: Space Physics, 2017, 122, 4430-4435.   | 2.4 | 14        |
| 51 | The Effect of a Guide Field on Local Energy Conversion During Asymmetric Magnetic Reconnection: Particle-in-Cell Simulations. Journal of Geophysical Research: Space Physics, 2017, 122, 11,523.   | 2.4 | 27        |
| 52 | Transition from global to local control of dayside reconnection from ionospheric-sourced mass loading. Journal of Geophysical Research: Space Physics, 2017, 122, 9474-9488.   | 2.4 | 17        |
| 53 | Inside the Black Box: Magnetic Reconnection and the Magnetospheric Multiscale Mission. Space Weather, 2016, 14, 186-197.   | 3.7 | 21        |
| 54 | 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        |

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|----|--|------|-----------|
| 55 | Ion-scale secondary flux ropes generated by magnetopause reconnection as resolved by MMS. Geophysical Research Letters, 2016, 43, 4716-4724.   | 4.0  | 95        |
| 56 | The local dayside reconnection rate for oblique interplanetary magnetic fields. Journal of Geophysical Research: Space Physics, 2016, 121, 5105-5120.  | 2.4  | 12        |
| 57 | 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         |
| 58 | Electron-scale measurements of magnetic reconnection in space. Science, 2016, 352, aaf2939.  | 12.6 | 545       |
| 59 | Magnetospheric ion influence on magnetic reconnection at the duskside magnetopause. Geophysical Research Letters, 2016, 43, 1435-1442.   | 4.0  | 42        |
| 60 | 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        |
| 61 | MMS observations of electron-scale filamentary currents in the reconnection exhaust and near the X line. Geophysical Research Letters, 2016, 43, 6060-6069.  | 4.0  | 99        |
| 62 | Stable reconnection at the dusk flank magnetopause. Geophysical Research Letters, 2016, 43, 9374-9382.   | 4.0  | 7         |
| 63 | Magnetospheric Multiscale Satellites Observations of Parallel Electric Fields Associated with Magnetic Reconnection. Physical Review Letters, 2016, 116, 235102.                                       | 7.8  | 61        |
| 64 | Magnetospheric Multiscale Observations of the Electron Diffusion Region of Large Guide Field Magnetic Reconnection. Physical Review Letters, 2016, 117, 015001.  | 7.8  | 74        |
| 65 | The effects of turbulence on three-dimensional magnetic reconnection at the magnetopause. Geophysical Research Letters, 2016, 43, 6020-6027.   | 4.0  | 80        |
| 66 | 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         |
| 67 | Observations of Hall Reconnection Physics Far Downstream of the $X$ Line. Physical Review Letters, 2016, 117, 185102.  | 7.8  | 22        |
| 68 | Spacecraft Observations and Analytic Theory of Crescent-Shaped Electron Distributions in Asymmetric Magnetic Reconnection. Physical Review Letters, 2016, 117, 185101.                                 | 7.8  | 42        |
| 69 | 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        |
| 70 | Kinetic signatures of the region surrounding the $X$ line in asymmetric (magnetopause) reconnection. Geophysical Research Letters, 2016, 43, 4145-4154.  | 4.0  | 106       |
| 71 | Magnetospheric Multiscale observations of large-amplitude, parallel, electrostatic waves associated with magnetic reconnection at the magnetopause. Geophysical Research Letters, 2016, 43, 5626-5634. | 4.0  | 66        |
| 72 | Reconnection at Earth's Dayside Magnetopause. Astrophysics and Space Science Library, 2016, , 213-276.   | 2.7  | 38        |

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|----|---|-----|-----------|
| 73 | Asymmetric magnetic reconnection with a flow shear and applications to the magnetopause. <i>Journal of Geophysical Research: Space Physics</i> , 2015, 120, 7748-7763.  | 2.4 | 46        |
| 74 | Comparative analysis of dayside magnetic reconnection models in global magnetosphere simulations. <i>Journal of Geophysical Research: Space Physics</i> , 2015, 120, 276-294.   | 2.4 | 46        |
| 75 | Fast magnetic reconnection due to anisotropic electron pressure. <i>Physics of Plasmas</i> , 2015, 22, .  | 1.9 | 24        |
| 76 | Electron heating during magnetic reconnection: A simulation scaling study. <i>Physics of Plasmas</i> , 2014, 21, .  | 1.9 | 74        |
| 77 | On the 3D structure and dissipation of reconnection-driven flow bursts. <i>Geophysical Research Letters</i> , 2014, 41, 3710-3716.  | 4.0 | 50        |
| 78 | Observation of a retreating $x$ line and magnetic islands poleward of the cusp during northward interplanetary magnetic field conditions. <i>Journal of Geophysical Research: Space Physics</i> , 2014, 119, 9643-9657. | 2.4 | 17        |
| 79 | Overview on numerical studies of reconnection and dissipation in the solar wind. , 2013, , .  |     | 0         |
| 80 | On phase diagrams of magnetic reconnection. <i>Physics of Plasmas</i> , 2013, 20, .   | 1.9 | 27        |
| 81 | New Electric Field in Asymmetric Magnetic Reconnection. <i>Physical Review Letters</i> , 2013, 111, 135001.   | 7.8 | 41        |
| 82 | ON THE CAUSE OF SUPRA-ARCADE DOWNFLOWS IN SOLAR FLARES. <i>Astrophysical Journal Letters</i> , 2013, 775, L14.  | 8.3 | 26        |
| 83 | Tracing magnetic separators and their dependence on IMF clock angle in global magnetospheric simulations. <i>Journal of Geophysical Research: Space Physics</i> , 2013, 118, 4998-5007.                                 | 2.4 | 36        |
| 84 | Reconnection events in two-dimensional Hall magnetohydrodynamic turbulence. <i>Physics of Plasmas</i> , 2012, 19, .   | 1.9 | 35        |
| 85 | Guide field dependence of $X$ line spreading during collisionless magnetic reconnection. <i>Journal of Geophysical Research</i> , 2012, 117, .  | 3.3 | 41        |
| 86 | Magnetic Reconnection for Coronal Conditions: Reconnection Rates, Secondary Islands and Onset. <i>Space Science Reviews</i> , 2012, 172, 283-302.   | 8.1 | 46        |
| 87 | Magnetic reconnection as an element of turbulence. <i>Nonlinear Processes in Geophysics</i> , 2011, 18, 675-695.  | 1.3 | 96        |
| 88 | ESTIMATES OF DENSITIES AND FILLING FACTORS FROM A COOLING TIME ANALYSIS OF SOLAR MICROFLARES OBSERVED WITH <i>RHESSI</i> . <i>Astrophysical Journal</i> , 2011, 736, 75.  | 4.5 | 3         |
| 89 | Theory and simulations of the scaling of magnetic reconnection with symmetric shear flow. <i>Physics of Plasmas</i> , 2011, 18, .   | 1.9 | 25        |
| 90 | Model for Incomplete Reconnection in Sawtooth Crashes. <i>Physical Review Letters</i> , 2011, 107, 255002.  | 7.8 | 33        |

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| 91  | Scaling of the magnetic reconnection rate with symmetric shear flow. <i>Physics of Plasmas</i> , 2011, 18, .   | 1.9 | 40        |
| 92  | Three-dimensional simulations of the orientation and structure of reconnection X-lines. <i>Physics of Plasmas</i> , 2010, 17, .  | 1.9 | 21        |
| 93  | A saddle-node bifurcation model of magnetic reconnection onset. <i>Physics of Plasmas</i> , 2010, 17, .  | 1.9 | 21        |
| 94  | Comparison of Secondary Islands in Collisional Reconnection to Hall Reconnection. <i>Physical Review Letters</i> , 2010, 105, 015004.  | 7.8 | 73        |
| 95  | Statistics of magnetic reconnection in two-dimensional magnetohydrodynamic turbulence. <i>Physics of Plasmas</i> , 2010, 17, .   | 1.9 | 113       |
| 96  | Magnetic reconnection with asymmetry in the outflow direction. <i>Journal of Geophysical Research</i> , 2010, 115, .   | 3.3 | 24        |
| 97  | Scaling of asymmetric magnetic reconnection: Kinetic particle-in-cell simulations. <i>Journal of Geophysical Research</i> , 2010, 115, .   | 3.3 | 61        |
| 98  | THE IMPACT OF MICROSCOPIC MAGNETIC RECONNECTION ON PRE-FLARE ENERGY STORAGE. <i>Astrophysical Journal</i> , 2009, 707, L158-L162.  | 4.5 | 32        |
| 99  | Scaling of Sweet-Parker reconnection with secondary islands. <i>Physics of Plasmas</i> , 2009, 16, 120702.   | 1.9 | 104       |
| 100 | Structure of the dissipation region in fluid simulations of asymmetric magnetic reconnection. <i>Physics of Plasmas</i> , 2009, 16, 055704.  | 1.9 | 48        |
| 101 | Kinetic dissipation and anisotropic heating in a turbulent collisionless plasma. <i>Physics of Plasmas</i> , 2009, 16, .   | 1.9 | 109       |
| 102 | Response to "Comment on "Scaling of asymmetric magnetic reconnection: General theory and collisional simulations" [Phys. Plasmas 16, 034701 (2009)]. <i>Physics of Plasmas</i> , 2009, 16, 034702. | 1.9 | 2         |
| 103 | The hall effect in magnetic reconnection: Hybrid versus Hall-less hybrid simulations. <i>Geophysical Research Letters</i> , 2009, 36, .  | 4.0 | 24        |
| 104 | Magnetic Reconnection in Two-Dimensional Magnetohydrodynamic Turbulence. <i>Physical Review Letters</i> , 2009, 102, 115003.   | 7.8 | 205       |
| 105 | Ion heating resulting from pickup in magnetic reconnection exhausts. <i>Journal of Geophysical Research</i> , 2009, 114, .   | 3.3 | 151       |
| 106 | A MAGNETIC RECONNECTION MECHANISM FOR ION ACCELERATION AND ABUNDANCE ENHANCEMENTS IN IMPULSIVE FLARES. <i>Astrophysical Journal</i> , 2009, 700, L16-L20.  | 4.5 | 153       |
| 107 | Scaling of asymmetric Hall magnetic reconnection. <i>Geophysical Research Letters</i> , 2008, 35, .  | 4.0 | 54        |
| 108 | From Solar and Stellar Flares to Coronal Heating: Theory and Observations of How Magnetic Reconnection Regulates Coronal Conditions. <i>Astrophysical Journal</i> , 2008, 676, L69-L72.            | 4.5 | 46        |

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|-----|--|-----|-----------|
| 109 | Catastrophic onset of fast magnetic reconnection with a guide field. <i>Physics of Plasmas</i> , 2007, 14, 054502.   | 1.9 | 45        |
| 110 | Scaling of asymmetric magnetic reconnection: General theory and collisional simulations. <i>Physics of Plasmas</i> , 2007, 14, .   | 1.9 | 401       |
| 111 | Onset of Fast Magnetic Reconnection. <i>Physical Review Letters</i> , 2007, 98, 215001.  | 7.8 | 69        |
| 112 | A Model for Spontaneous Onset of Fast Magnetic Reconnection. <i>Astrophysical Journal</i> , 2006, 644, L145-L148.  | 4.5 | 72        |
| 113 | Catastrophe Model for Fast Magnetic Reconnection Onset. <i>Physical Review Letters</i> , 2005, 95, 235002.   | 7.8 | 144       |
| 114 | Microwave measurements of rhenium quadrupole coupling in cyclopentadienyl rhenium tricarbonyl. <i>Journal of Chemical Physics</i> , 1998, 108, 8878-8883.  | 3.0 | 10        |
| 115 | Determination of structural parameters for the half-sandwich compounds cyclopentadienyl thallium and cyclopentadienyl indium and indium quadrupole coupling for cyclopentadienyl indium using microwave spectroscopy. <i>Journal of Chemical Physics</i> , 1997, 107, 3766-3773. | 3.0 | 14        |
| 116 | Measurements of structural and quadrupole coupling parameters for bromoferrocene using microwave spectroscopy. <i>Journal of Chemical Physics</i> , 1997, 107, 6541-6548.  | 3.0 | 18        |
| 117 | Measurements of Structural and Quadrupolar Coupling Parameters for Chloroferrocene Using Microwave Spectroscopy. <i>Inorganic Chemistry</i> , 1997, 36, 2868-2871.   | 4.0 | 9         |