

Petr Hellinger

List of Publications by Year in descending order

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116
papers

4,319
citations

71102

41
h-index

123424

61
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129
all docs

129
docs citations

129
times ranked

1807
citing authors

#	ARTICLE	IF	CITATIONS
1	Solar wind proton temperature anisotropy: Linear theory and WIND/SWE observations. <i>Geophysical Research Letters</i> , 2006, 33, .	4.0	378
2	Evolution of the solar wind proton temperature anisotropy from 0.3 to 2.5 AU. <i>Geophysical Research Letters</i> , 2007, 34, .	4.0	177
3	A hybrid-Vlasov model based on the current advance method for the simulation of collisionless magnetized plasma. <i>Journal of Computational Physics</i> , 2007, 225, 753-770.	3.8	167
4	New kinetic instability: Oblique Alfvén fire hose. <i>Journal of Geophysical Research</i> , 2000, 105, 10519-10526.	3.3	107
5	Proton thermal energetics in the solar wind: Helios reloaded. <i>Journal of Geophysical Research: Space Physics</i> , 2013, 118, 1351-1365.	2.4	97
6	Ion Kinetics in the Solar Wind: Coupling Global Expansion to Local Microphysics. <i>Space Science Reviews</i> , 2012, 172, 373-396.	8.1	95
7	Heating and cooling of protons in the fast solar wind between 0.3 and 1 AU: Helios revisited. <i>Journal of Geophysical Research</i> , 2011, 116, n/a-n/a.	3.3	92
8	Magnetic Reconnection as a Driver for a Sub-ion-scale Cascade in Plasma Turbulence. <i>Astrophysical Journal Letters</i> , 2017, 850, L16.	8.3	92
9	HIGH-RESOLUTION HYBRID SIMULATIONS OF KINETIC PLASMA TURBULENCE AT PROTON SCALES. <i>Astrophysical Journal</i> , 2015, 812, 21.	4.5	90
10	Oblique proton fire hose instability in the expanding solar wind: Hybrid simulations. <i>Journal of Geophysical Research</i> , 2008, 113, .	3.3	84
11	The Solar Orbiter Radio and Plasma Waves (RPW) instrument. <i>Astronomy and Astrophysics</i> , 2020, 642, A12.	5.1	80
12	Parallel proton fire hose instability in the expanding solar wind: Hybrid simulations. <i>Journal of Geophysical Research</i> , 2006, 111, .	3.3	79
13	Comment on the linear mirror instability near the threshold. <i>Physics of Plasmas</i> , 2007, 14, .	1.9	74
14	Mirror structures above and below the linear instability threshold: Cluster observations, fluid model and hybrid simulations. <i>Annales Geophysicae</i> , 2009, 27, 601-615.	1.6	74
15	Solar Wind Turbulent Cascade from MHD to Sub-ion Scales: Large-size 3D Hybrid Particle-in-cell Simulations. <i>Astrophysical Journal</i> , 2018, 853, 26.	4.5	69
16	Signatures of kinetic instabilities in the solar wind. <i>Journal of Geophysical Research: Space Physics</i> , 2013, 118, 2771-2782.	2.4	68
17	Nonstationarity of a two-dimensional perpendicular shock: Competing mechanisms. <i>Journal of Geophysical Research</i> , 2009, 114, .	3.3	67
18	Mercury's magnetosphere's solar wind interaction for northward and southward interplanetary magnetic field: Hybrid simulation results. <i>Icarus</i> , 2010, 209, 11-22.	2.5	66

#	ARTICLE	IF	CITATIONS
19	PLASMA BETA DEPENDENCE OF THE ION-SCALE SPECTRAL BREAK OF SOLAR WIND TURBULENCE: HIGH-RESOLUTION 2D HYBRID SIMULATIONS. <i>Astrophysical Journal</i> , 2016, 833, 91.	4.5	65
20	Reformation of perpendicular shocks: Hybrid simulations. <i>Geophysical Research Letters</i> , 2002, 29, 87-1-87-4.	4.0	63
21	Structure of Mercury's magnetosphere for different pressure of the solar wind: Three dimensional hybrid simulations. <i>Geophysical Research Letters</i> , 2007, 34, .	4.0	61
22	Kinetics of parametric instabilities of Alfvén waves: Evolution of ion distribution functions. <i>Journal of Geophysical Research</i> , 2010, 115, .	3.3	58
23	Nonlinear mirror mode dynamics: Simulations and modeling. <i>Journal of Geophysical Research</i> , 2008, 113, .	3.3	57
24	SOLAR WIND TURBULENCE FROM MHD TO SUB-ION SCALES: HIGH-RESOLUTION HYBRID SIMULATIONS. <i>Astrophysical Journal Letters</i> , 2015, 804, L39.	8.3	57
25	Oblique electron fire hose instability: Particle-in-cell simulations. <i>Journal of Geophysical Research: Space Physics</i> , 2014, 119, 59-68.	2.4	56
26	von Kármán–Howarth Equation for Hall Magnetohydrodynamics: Hybrid Simulations. <i>Astrophysical Journal Letters</i> , 2018, 857, L19.	8.3	55
27	Emission of nonlinear whistler waves at the front of perpendicular supercritical shocks: Hybrid versus full particle simulations. <i>Geophysical Research Letters</i> , 2007, 34, .	4.0	54
28	A Review of Alfvénic Turbulence in High-Speed Solar Wind Streams: Hints From Cometary Plasma Turbulence. <i>Journal of Geophysical Research: Space Physics</i> , 2018, 123, 2458-2492.	2.4	51
29	Structure of the lunar wake: Two-dimensional global hybrid simulations. <i>Geophysical Research Letters</i> , 2005, 32, .	4.0	50
30	Heliospheric magnetic field polarity inversions driven by radial velocity field structures. <i>Geophysical Research Letters</i> , 2006, 33, .	4.0	50
31	Can Hall Magnetohydrodynamics Explain Plasma Turbulence at Sub-ion Scales?. <i>Astrophysical Journal</i> , 2019, 870, 52.	4.5	49
32	Magnetosheath compression: Role of characteristic compression time, alpha particle abundance, and alpha/proton relative velocity. <i>Journal of Geophysical Research</i> , 2005, 110, .	3.3	48
33	Nonlinear evolution of the magnetized Kelvin-Helmholtz instability: From fluid to kinetic modeling. <i>Physics of Plasmas</i> , 2013, 20, .	1.9	48
34	Electron energetics in the expanding solar wind via Helios observations. <i>Journal of Geophysical Research: Space Physics</i> , 2015, 120, 8177-8193.	2.4	48
35	ARTEMIS Science Objectives. <i>Space Science Reviews</i> , 2011, 165, 59-91.	8.1	47
36	Parametric decay of linearly polarized shear Alfvén waves in oblique propagation: One and two-dimensional hybrid simulations. <i>Geophysical Research Letters</i> , 2010, 37, .	4.0	46

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37	Alfvén wave heating of heavy ions in the expanding solar wind: Hybrid simulations. <i>Journal of Geophysical Research</i> , 2005, 110, .	3.3	45
38	ANISOTROPY OF THIRD-ORDER STRUCTURE FUNCTIONS IN MHD TURBULENCE. <i>Astrophysical Journal</i> , 2015, 804, 119.	4.5	45
39	PLASMA TURBULENCE AND KINETIC INSTABILITIES AT ION SCALES IN THE EXPANDING SOLAR WIND. <i>Astrophysical Journal Letters</i> , 2015, 811, L32.	8.3	43
40	<i>In Situ</i> Observation of Hall Magnetohydrodynamic Cascade in Space Plasma. <i>Physical Review Letters</i> , 2020, 124, 225101.	7.8	43
41	Parallel and oblique proton fire hose instabilities in the presence of alpha/proton drift: Hybrid simulations. <i>Journal of Geophysical Research</i> , 2006, 111, .	3.3	42
42	Excitation of electron acoustic waves near the electron plasma frequency and at twice the plasma frequency. <i>Journal of Geophysical Research</i> , 2000, 105, 12919-12927.	3.3	40
43	Quasi-trapped ion and electron populations at Mercury. <i>Geophysical Research Letters</i> , 2011, 38, n/a-n/a.	4.0	40
44	Hybrid simulations of the expanding solar wind: Temperatures and drift velocities. <i>Geophysical Research Letters</i> , 2003, 30, n/a-n/a.	4.0	39
45	Kinetic instabilities in Mercury's magnetosphere: Three-dimensional simulation results. <i>Geophysical Research Letters</i> , 2009, 36, .	4.0	38
46	Nonlinear competition between the whistler and Alfvén fire hoses. <i>Journal of Geophysical Research</i> , 2001, 106, 13215-13218.	3.3	37
47	SOLAR WIND PROTONS AT 1 AU: TRENDS AND BOUNDS, CONSTRAINTS AND CORRELATIONS. <i>Astrophysical Journal Letters</i> , 2014, 784, L15.	8.3	37
48	Protons and alpha particles in the expanding solar wind: Hybrid simulations. <i>Journal of Geophysical Research: Space Physics</i> , 2013, 118, 5421-5430.	2.4	35
49	Plasma turbulence at ion scales: a comparison between particle in cell and Eulerian hybrid-kinetic approaches. <i>Journal of Plasma Physics</i> , 2017, 83, .	2.1	34
50	Hybrid simulations of the magnetosheath compression: Marginal stability path. <i>Geophysical Research Letters</i> , 2003, 30, .	4.0	32
51	Effective collision frequency due to ion-acoustic instability: Theory and simulations. <i>Geophysical Research Letters</i> , 2004, 31, n/a-n/a.	4.0	31
52	Proton core-beam system in the expanding solar wind: Hybrid simulations. <i>Journal of Geophysical Research</i> , 2011, 116, n/a-n/a.	3.3	31
53	Electron transport and precipitation at Mercury during the MESSENGER flybys: Implications for electron-stimulated desorption. <i>Planetary and Space Science</i> , 2011, 59, 2026-2036.	1.7	30
54	Microstructure in two- and three-dimensional hybrid simulations of perpendicular collisionless shocks. <i>Journal of Plasma Physics</i> , 2016, 82, .	2.1	30

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55	The Parametric Instability of Alfvén Waves: Effects of Temperature Anisotropy. <i>Astrophysical Journal</i> , 2017, 851, 99.	4.5	29
56	Density Fluctuations in the Solar Wind Driven by Alfvén Wave Parametric Decay. <i>Astrophysical Journal Letters</i> , 2018, 854, L33.	8.3	28
57	Timing mirror structures observed by Cluster with a magnetosheath flow model. <i>Annales Geophysicae</i> , 2011, 29, 1849-1860.	1.6	25
58	Mirror mode structures in the asymmetric Hermean magnetosheath: Hybrid simulations. <i>Journal of Geophysical Research: Space Physics</i> , 2013, 118, 405-417.	2.4	25
59	Proton temperature-anisotropy-driven instabilities in weakly collisional plasmas: Hybrid simulations. <i>Journal of Plasma Physics</i> , 2015, 81, .	2.1	25
60	Mirror Instability in the Turbulent Solar Wind. <i>Astrophysical Journal</i> , 2017, 838, 158.	4.5	25
61	Electron mirror instability: particle-in-cell simulations. <i>Journal of Plasma Physics</i> , 2018, 84, .	2.1	24
62	On Coulomb collisions in bi-Maxwellian plasmas. <i>Physics of Plasmas</i> , 2009, 16, .	1.9	23
63	Mirror instability: From quasi-linear diffusion to coherent structures. <i>Geophysical Research Letters</i> , 2009, 36, .	4.0	23
64	Magnetosheath plasma expansion: Hybrid simulations. <i>Geophysical Research Letters</i> , 2007, 34, .	4.0	22
65	FIRE HOSE INSTABILITY DRIVEN BY ALPHA PARTICLE TEMPERATURE ANISOTROPY. <i>Astrophysical Journal</i> , 2015, 812, 13.	4.5	22
66	Whistler waves in 3D hybrid simulations of quasiperpendicular shocks. <i>Geophysical Research Letters</i> , 1996, 23, 621-624.	4.0	21
67	Electromagnetic ion beam instabilities: Oblique pulsations. <i>Journal of Geophysical Research</i> , 1999, 104, 4669-4680.	3.3	21
68	Upstream whistlers generated by protons reflected from a quasi-perpendicular shock. <i>Journal of Geophysical Research</i> , 1997, 102, 9809-9819.	3.3	20
69	Three-dimensional simulations of solar wind turbulence with the hybrid code CAMELIA. <i>Journal of Physics: Conference Series</i> , 2018, 1031, 012002.	0.4	19
70	Magnetic Field Turbulence in the Solar Wind at Sub-ion Scales: In Situ Observations and Numerical Simulations. <i>Frontiers in Astronomy and Space Sciences</i> , 2020, 7, .	2.8	19
71	Turbulence versus Fire-hose Instabilities: 3D Hybrid Expanding Box Simulations. <i>Astrophysical Journal</i> , 2019, 883, 178.	4.5	18
72	Universal R-matrix for a two-parametric quantization of $gl(2)$. <i>Journal of Physics A</i> , 1992, 25, L629-L631.	1.6	17

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73	Development of global magnetohydrodynamic instabilities in Z-pinch plasmas in the presence of nonideal effects. <i>Physics of Plasmas</i> , 2004, 11, 1897-1907.	1.9	17
74	Modeling MMS Observations at the Earth's Magnetopause with Hybrid Simulations of Alfvénic Turbulence. <i>Astrophysical Journal</i> , 2020, 898, 175.	4.5	17
75	Linear dispersion properties of ring velocity distribution functions. <i>Physics of Plasmas</i> , 2015, 22, .	1.9	16
76	Spectrum of kinetic plasma turbulence at 0.3–0.9 astronomical units from the Sun. <i>Physical Review E</i> , 2021, 103, 063202.	2.1	15
77	Fast Acceleration of Transrelativistic Electrons in Astrophysical Turbulence. <i>Astrophysical Journal</i> , 2020, 894, 136.	4.5	14
78	Properties of Hermean plasma belt: Numerical simulations and comparison with MESSENGER data. <i>Journal of Geophysical Research: Space Physics</i> , 2016, 121, 413-431.	2.4	13
79	Structure and stationarity of quasi-perpendicular shocks: Numerical simulations. <i>Planetary and Space Science</i> , 2003, 51, 649-657.	1.7	12
80	Multidimensional Iterative Filtering: a new approach for investigating plasma turbulence in numerical simulations. <i>Journal of Plasma Physics</i> , 2020, 86, .	2.1	12
81	Spectral Transfer and Kolmogorov–Howarth–Monin Equations for Compressible Hall Magnetohydrodynamics. <i>Astrophysical Journal</i> , 2021, 917, 101.	4.5	12
82	Alfvén wave filamentation and dispersive phase mixing in a high-density channel: Landau fluid and hybrid simulations. <i>Nonlinear Processes in Geophysics</i> , 2009, 16, 275-285.	1.3	12
83	Proton Energization by Phase Steepening of Parallel-propagating Alfvénic Fluctuations. <i>Astrophysical Journal Letters</i> , 2021, 914, L36.	8.3	11
84	The Role of Parametric Instabilities in Turbulence Generation and Proton Heating: Hybrid Simulations of Parallel-propagating Alfvénic Waves. <i>Astrophysical Journal</i> , 2020, 904, 81.	4.5	11
85	The universal R-matrix and the Yang-Baxter equation with parameters. <i>Journal of Physics A</i> , 1992, 25, L1023-L1027.	1.6	10
86	Langevin representation of Coulomb collisions for bi-Maxwellian plasmas. <i>Journal of Computational Physics</i> , 2010, 229, 5432-5439.	3.8	10
87	PROTON HEATING BY PICK-UP ION DRIVEN CYCLOTRON WAVES IN THE OUTER HELIOSPHERE: HYBRID EXPANDING BOX SIMULATIONS. <i>Astrophysical Journal</i> , 2016, 832, 32.	4.5	10
88	Proton fire hose instabilities in the expanding solar wind. <i>Journal of Plasma Physics</i> , 2017, 83, .	2.1	10
89	Two-dimensional hybrid simulations of kinetic plasma turbulence: Current and vorticity vs proton temperature. <i>AIP Conference Proceedings</i> , 2016, , .	0.4	9
90	Dynamic Plasma Interaction at Io: Multispecies Hybrid Simulations. <i>Journal of Geophysical Research: Space Physics</i> , 2019, 124, 313-341.	2.4	9

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91	Spacetime Hall-MHD Turbulence at Sub-ion Scales: Structures or Waves?. Astrophysical Journal Letters, 2021, 917, L12.	8.3	9
92	First observations and performance of the RPW instrument on board the Solar Orbiter mission. Astronomy and Astrophysics, 2021, 656, A41.	5.1	9
93	Ion-scale Transition of Plasma Turbulence: Pressureâ€“Strain Effect. Astrophysical Journal, 2022, 930, 48.	4.5	9
94	Comment on the drift mirror instability. Physics of Plasmas, 2008, 15, .	1.9	8
95	Cometary ion instabilities in the solar wind. Planetary and Space Science, 2015, 119, 3-12.	1.7	8
96	Quasi-linear heating and acceleration in bi-Maxwellian plasmas. Physics of Plasmas, 2013, 20, .	1.9	7
97	Excitation of waves at 2 ω_{pe} and back propagating waves at ω_{pe} : a parametric study. Nonlinear Processes in Geophysics, 2003, 10, 345-349.	1.3	6
98	Hybrid Simulation of Collisionless Shock Formation in Support of Laboratory Experiments at Unr. Astrophysics and Space Science, 2005, 298, 369-374.	1.4	5
99	Hybrid simulation of the Z-pinch instabilities for profiles generated during wire array implosion in the Saturn pulsed power generator. Physics of Plasmas, 2005, 12, 092701.	1.9	5
100	ION COLLISIONAL TRANSPORT COEFFICIENTS IN THE SOLAR WIND AT 1 au. Astrophysical Journal, 2016, 825, 120.	4.5	5
101	On the role of wave-particle interactions in the evolution of solar wind ion distribution functions. AIP Conference Proceedings, 2010, , .	0.4	4
102	Scale dependence and cross-scale transfer of kinetic energy in compressible hydrodynamic turbulence at moderate Reynolds numbers. Physical Review Fluids, 2021, 6, .	2.5	4
103	ARTEMIS Science Objectives. , 2011, , 27-59.		4
104	Properties of Hall-MHD Turbulence at Sub-Ion Scales: Spectral Transfer Analysis. Atmosphere, 2021, 12, 1632.	2.3	4
105	A global three dimensional hybrid simulation of the interaction between a weakly magnetized obstacle and the solar wind. AIP Conference Proceedings, 2003, , .	0.4	2
106	Hybrid simulations of Z-pinchs. Computer Physics Communications, 2004, 164, 150-155.	7.5	2
107	On the quasi-linear diffusion in collisionless plasmas (to say nothing about Landau damping). Physics of Plasmas, 2012, 19, 062307.	1.9	2
108	Ion cyclotron instability at Io: Hybrid simulation results compared to in situ observations. Journal of Geophysical Research: Space Physics, 2016, 121, 7514-7534.	2.4	2

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109	Hybrid Simulations of Current-Carrying Instabilities in Z-Pinch Plasmas with Sheared Axial Flow. AIP Conference Proceedings, 2002, , .	0.4	1
110	Hybrid simulation of z-pinches in support of wire array implosion experiments at the Nevada Terawatt Facility. Journal of Plasma Physics, 2006, 72, 1113.	2.1	1
111	Influence of kinetic effects on the shape of mirror structures. , 2009, , .		1
112	Temperature anisotropy instabilities; combining plasma and magnetic field data at different distances from the Sun. , 2013, , .		1
113	Nonlinear mirror structures in a plasma with thermal pressure anisotropy. , 2010, , .		0
114	IMPALAS: Investigation of MagnetoPause Activity using Longitudinally-Aligned Satellitesâ€”a mission concept proposed for the ESA M3 2020/2022 launch. Experimental Astronomy, 2012, 33, 365-401.	3.7	0
115	Ion Kinetics in the Solar Wind: Coupling Global Expansion to Local Microphysics. Space Sciences Series of ISSI, 2011, , 373-396.	0.0	0
116	Editorial: Advances in Space Plasma Turbulence: Theory and Observations. Frontiers in Astronomy and Space Sciences, 2021, 8, .	2.8	0