

# Eckart Marsch

## List of Publications by Year in descending order

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129  
papers

6,683  
citations

71061

41  
h-index

62565

80  
g-index

130  
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130  
docs citations

130  
times ranked

2308  
citing authors

#	ARTICLE	IF	CITATIONS
1	Lorentz invariance and the spinor-helicity formalism yield the U(1) and SU(3) fermion symmetry. European Physical Journal Plus, 2022, 137, .	1.2	3
2	Connecting in the Dirac Equation the Clifford Algebra of Lorentz Invariance with the Lie Algebra of SU(N) Gauge Symmetry. Symmetry, 2021, 13, 475.	1.1	6
3	Threefold spin helicity as possible origin of SU(3) gauge symmetry. European Physical Journal Plus, 2021, 136, 1.	1.2	0
4	CPTM Symmetry for the Dirac Equation and Its Extended Version Based on the Vector Representation of the Lorentz Group. Frontiers in Physics, 2021, 9, .	1.0	3
5	Dirac equation based on the vector representation of the Lorentz group. European Physical Journal Plus, 2020, 135, 1.	1.2	10
6	Solar wind and kinetic heliophysics. Annales Geophysicae, 2018, 36, 1607-1630.	0.6	17
7	Relativistic wave equation for a massive charged particle with arbitrary spin. European Physical Journal Plus, 2017, 132, 1.	1.2	6
8	Multiscale Pressure-Balanced Structures in Three-dimensional Magnetohydrodynamic Turbulence. Astrophysical Journal, 2017, 836, 69.	1.6	20
9	Influence of Intermittency on the Quasi-perpendicular Scaling in Three-dimensional Magnetohydrodynamic Turbulence. Astrophysical Journal, 2017, 846, 49.	1.6	13
10	Waveâ€‘particle resonance condition test for ion-kinetic waves in the solar wind. Annales Geophysicae, 2016, 34, 393-398.	0.6	4
11	Synthetic spectral analysis of a kinetic model for slow-magnetosonic waves in solar corona. AIP Conference Proceedings, 2016, , .	0.3	0
12	Two cases of convecting structure in the slow solar wind turbulence. AIP Conference Proceedings, 2016, , .	0.3	13
13	Fundamental Fermion Interactions via Vector Bosons of Unified SU(2)âŠ—SU(4) Gauge Fields. Frontiers in Physics, 2016, 4, .	1.0	5
14	KINETIC SIMULATION OF SLOW MAGNETOSONIC WAVES AND QUASI-PERIODIC UPFLOWS IN THE SOLAR CORONA. Astrophysical Journal, 2016, 825, 58.	1.6	16
15	Influence of intermittency on the anisotropy of magnetic structure functions of solar wind turbulence. Journal of Geophysical Research: Space Physics, 2016, 121, 911-924.	0.8	17
16	SPECTRAL ANISOTROPY OF ELSÄ„SSER VARIABLES IN TWO-DIMENSIONAL WAVE-VECTOR SPACE AS OBSERVED IN THE FAST SOLAR WIND TURBULENCE. Astrophysical Journal Letters, 2016, 816, L24.	3.0	15
17	On the weakly anisotropic nature of the time-stationary turbulence in the solar wind. AIP Conference Proceedings, 2016, , .	0.3	1
18	THE FORMATION OF ROTATIONAL DISCONTINUITIES IN COMPRESSIVE THREE-DIMENSIONAL MHD TURBULENCE. Astrophysical Journal, 2015, 809, 155.	1.6	22

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19	The upstreamâ€propagating AlfvÃ©nic fluctuations with power law spectra in the upstream region of the Earth's bow shock. <i>Geophysical Research Letters</i> , 2015, 42, 3654-3661.	1.5	14
20	THE SPECTRAL FEATURES OF LOW-AMPLITUDE MAGNETIC FLUCTUATIONS IN THE SOLAR WIND AND THEIR COMPARISON WITH MODERATE-AMPLITUDE FLUCTUATIONS. <i>Astrophysical Journal Letters</i> , 2015, 810, L21.	3.0	22
21	PROTON HEATING IN SOLAR WIND COMPRESSIBLE TURBULENCE WITH COLLISIONS BETWEEN COUNTER-PROPAGATING WAVES. <i>Astrophysical Journal Letters</i> , 2015, 813, L30.	3.0	40
22	On Charge Conjugation, Chirality and Helicity of the Dirac and Majorana Equation for Massive Leptons. <i>Symmetry</i> , 2015, 7, 450-463.	1.1	1
23	Fermion unification model based on the intrinsic SU(8) symmetry of a generalized Dirac equation. <i>Frontiers in Physics</i> , 2015, 3, .	1.0	9
24	KINETIC SLOW MODE IN THE SOLAR WIND AND ITS POSSIBLE ROLE IN TURBULENCE DISSIPATION AND ION HEATING. <i>Astrophysical Journal</i> , 2015, 805, 24.	1.6	42
25	OCCURRENCE RATES AND HEATING EFFECTS OF TANGENTIAL AND ROTATIONAL DISCONTINUITIES AS OBTAINED FROM THREE-DIMENSIONAL SIMULATION OF MAGNETOHYDRODYNAMIC TURBULENCE. <i>Astrophysical Journal Letters</i> , 2015, 804, L43.	3.0	24
26	SUNWARD PROPAGATING ALFVÃ©N WAVES IN ASSOCIATION WITH SUNWARD DRIFTING PROTON BEAMS IN THE SOLAR WIND. <i>Astrophysical Journal</i> , 2015, 805, 176.	1.6	29
27	EVIDENCE OF LANDAU AND CYCLOTRON RESONANCE BETWEEN PROTONS AND KINETIC WAVES IN SOLAR WIND TURBULENCE. <i>Astrophysical Journal Letters</i> , 2015, 800, L31.	3.0	87
28	Identification of slow magnetosonic wave trains and their evolution in 3-D compressible turbulence simulation. <i>Annales Geophysicae</i> , 2015, 33, 13-23.	0.6	10
29	Generation of temperature anisotropy for alpha particle velocity distributions in solar wind at 0.3 AU: Vlasov simulations and Helios observations. <i>Journal of Geophysical Research: Space Physics</i> , 2014, 119, 2400-2410.	0.8	14
30	REGULATION OF ION DRIFTS AND ANISOTROPIES BY PARAMETRICALLY UNSTABLE FINITE-AMPLITUDE ALFVÃ©N-CYCLOTRON WAVES IN THE FAST SOLAR WIND. <i>Astrophysical Journal</i> , 2014, 783, 139.	1.6	13
31	THE INFLUENCE OF INTERMITTENCY ON THE SPECTRAL ANISOTROPY OF SOLAR WIND TURBULENCE. <i>Astrophysical Journal Letters</i> , 2014, 783, L9.	3.0	37
32	SMALL-SCALE PRESSURE-BALANCED STRUCTURES DRIVEN BY OBLIQUE SLOW MODE WAVES MEASURED IN THE SOLAR WIND. <i>Astrophysical Journal</i> , 2013, 774, 59.	1.6	35
33	INJECTION OF PLASMA INTO THE NASCENT SOLAR WIND VIA RECONNECTION DRIVEN BY SUPERGRANULAR ADVECTION. <i>Astrophysical Journal</i> , 2013, 770, 6.	1.6	28
34	ON INTERMITTENT TURBULENCE HEATING OF THE SOLAR WIND: DIFFERENCES BETWEEN TANGENTIAL AND ROTATIONAL DISCONTINUITIES. <i>Astrophysical Journal Letters</i> , 2013, 772, L14.	3.0	52
35	SMALL-SCALE PRESSURE-BALANCED STRUCTURES DRIVEN BY MIRROR-MODE WAVES IN THE SOLAR WIND. <i>Astrophysical Journal</i> , 2013, 776, 94.	1.6	18
36	RADIAL EVOLUTION OF THE WAVEVECTOR ANISOTROPY OF SOLAR WIND TURBULENCE BETWEEN 0.3 AND 1 AU. <i>Astrophysical Journal</i> , 2013, 773, 72.	1.6	49

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37	A New Route to the Majorana Equation. <i>Symmetry</i> , 2013, 5, 271-286.	1.1	4
38	On the Majorana Equation: Relations between Its Complex Two-Component and Real Four-Component Eigenfunctions. <i>ISRN Mathematical Analysis</i> , 2012, 2012, 1-17.	0.3	3
39	LARGE-AMPLITUDE ALFVÉN WAVE IN INTERPLANETARY SPACE: THE WIND SPACECRAFT OBSERVATIONS. <i>Astrophysical Journal</i> , 2012, 746, 147.	1.6	41
40	Helios: Evolution of Distribution Functions 0.3–1 AU. <i>Space Science Reviews</i> , 2012, 172, 23-39.	3.7	67
41	Interactions of Alfvén-Cyclotron Waves with Ions in the Solar Wind. <i>Space Science Reviews</i> , 2012, 172, 361-372.	3.7	23
42	ELECTRON TRANSPORT IN THE FAST SOLAR WIND. <i>Astrophysical Journal</i> , 2012, 753, 31.	1.6	28
43	ON SPECTRAL BREAKS IN THE POWER SPECTRA OF MAGNETIC FLUCTUATIONS IN FAST SOLAR WIND BETWEEN 0.3 AND 0.9 AU. <i>Astrophysical Journal</i> , 2012, 749, 102.	1.6	99
44	REPRODUCTION OF THE OBSERVED TWO-COMPONENT MAGNETIC HELICITY IN SOLAR WIND TURBULENCE BY A SUPERPOSITION OF PARALLEL AND OBLIQUE ALFVÉN WAVES. <i>Astrophysical Journal</i> , 2012, 749, 86.	1.6	46
45	MULTI-SCALE ANTI-CORRELATION BETWEEN ELECTRON DENSITY AND MAGNETIC FIELD STRENGTH IN THE SOLAR WIND. <i>Astrophysical Journal</i> , 2011, 728, 146.	1.6	67
46	POSSIBLE EVIDENCE OF ALFVÉN-CYCLOTRON WAVES IN THE ANGLE DISTRIBUTION OF MAGNETIC HELICITY OF SOLAR WIND TURBULENCE. <i>Astrophysical Journal</i> , 2011, 731, 85.	1.6	176
47	ON THE RELATIVE SPEED AND TEMPERATURE RATIO OF SOLAR WIND ALPHA PARTICLES AND PROTONS: COLLISIONS VERSUS WAVE EFFECTS. <i>Astrophysical Journal Letters</i> , 2011, 728, L3.	3.0	47
48	On nonlinear Alfvén-cyclotron waves in multi-species plasma. <i>Journal of Plasma Physics</i> , 2011, 77, 385-403.	0.7	14
49	Compressive high-frequency waves riding on an Alfvén/ion-cyclotron wave in a multi-fluid plasma. <i>Journal of Plasma Physics</i> , 2011, 77, 693-707.	0.7	9
50	Apparent temperature anisotropies due to wave activity in the solar wind. <i>Annales Geophysicae</i> , 2011, 29, 909-917.	0.6	38
51	Velocity-space diffusion of solar wind protons in oblique waves and weak turbulence. <i>Annales Geophysicae</i> , 2011, 29, 2089-2099.	0.6	23
52	THE NASCENT FAST SOLAR WIND OBSERVED BY THE EUV IMAGING SPECTROMETER ON BOARD HINODE. <i>Astrophysical Journal Letters</i> , 2010, 709, L88-L93.	3.0	39
53	Solar wind origins in coronal holes and in the quiet Sun. <i>Advances in Space Research</i> , 2010, 45, 303-309.	1.2	17
54	Turbulence in the Solar Atmosphere and Solar Wind. <i>Space Science Reviews</i> , 2010, 156, 135-238.	3.7	56

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55	UPFLOWS IN FUNNEL-LIKE LEGS OF CORONAL MAGNETIC LOOPS. <i>Astrophysical Journal</i> , 2009, 704, 883-890.	1.6	34
56	Proton beam velocity distributions in an interplanetary coronal mass ejection. <i>Annales Geophysicae</i> , 2009, 27, 869-875.	0.6	19
57	Preferential Heating and Acceleration of $\mu_{\pm}$ Particles by Alfvén-Cyclotron Waves. <i>Physical Review Letters</i> , 2009, 102, 175001.	2.9	64
58	EXCITATION OF KINK WAVES DUE TO SMALL-SCALE MAGNETIC RECONNECTION IN THE CHROMOSPHERE?. <i>Astrophysical Journal</i> , 2009, 705, L217-L222.	1.6	92
59	Modeling of Solar Wind in the Coronal Funnel with Mass and Energy Supplied at 5 Åm. <i>Solar Physics</i> , 2008, 250, 147-158.	1.0	28
60	Space weather explorer “The KuaFu mission. <i>Advances in Space Research</i> , 2008, 41, 190-209.	1.2	19
61	Proton Core Heating and Beam Formation via Parametrically Unstable Alfvén-Cyclotron Waves. <i>Physical Review Letters</i> , 2008, 100, 125003.	2.9	112
62	An effective Dirac equation for a binary of two fermions. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2008, 41, 185301.	0.7	1
63	Multi-spacecraft observations to study the shock extension in the inner heliosphere. <i>Proceedings of the International Astronomical Union</i> , 2008, 4, 481-487.	0.0	0
64	On the Efficiency of Nonresonant Ion Heating by Coronal Alfvén Waves. <i>Astrophysical Journal</i> , 2008, 684, L119-L122.	1.6	39
65	Coronal Loop Model Including Ion Kinetics. <i>Astrophysical Journal</i> , 2008, 676, 1346-1355.	1.6	5
66	Cool and Hot Components of a Coronal Bright Point. <i>Astrophysical Journal</i> , 2008, 681, L121-L124.	1.6	42
67	Plasma Flows Guided by Strong Magnetic Fields in the Solar Corona. <i>Astrophysical Journal</i> , 2008, 685, 1262-1269.	1.6	70
68	Multi-Ion Kinetic Model for Coronal Loop. <i>Astrophysical Journal</i> , 2008, 680, L77-L80.	1.6	6
69	Emission heights of coronal bright points on Fe XII radiance map. <i>Advances in Space Research</i> , 2007, 39, 1853-1859.	1.2	14
70	Correlation Height of the Source Region of Si II Emission Lines in Coronal Hole Regions. <i>Chinese Astronomy and Astrophysics</i> , 2007, 31, 137-145.	0.1	0
71	Observations of the Sun at Vacuum-Ultraviolet Wavelengths from Space. Part II: Results and Interpretations. <i>Space Science Reviews</i> , 2007, 133, 103-179.	3.7	32
72	Limits on the core temperature anisotropy of solar wind protons. <i>Annales Geophysicae</i> , 2006, 24, 2057-2063.	0.6	43

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73	The Current-Free Electric Double Layer in a Coronal Magnetic Funnel. <i>Astrophysical Journal</i> , 2006, 640, L199-L202.	1.6	49
74	Solar wind responses to the solar activity cycle. <i>Advances in Space Research</i> , 2006, 38, 921-930.	1.2	17
75	Correlation Heights of the Sources of Solar Ultraviolet Emission Lines in a Quiet-Sun Region. <i>Astrophysical Journal</i> , 2005, 624, L133-L136.	1.6	28
76	Solar Orbiterâ€™ mission profile, main goals and present status. <i>Advances in Space Research</i> , 2005, 36, 1360-1366.	1.2	31
77	Solar Wind Origin in Coronal Funnels. <i>Science</i> , 2005, 308, 519-523.	6.0	256
78	The relativistic energy spectrum of hydrogen. <i>Annalen Der Physik</i> , 2005, 14, 324-343.	0.9	5
79	Observations of the Sun at Vacuum- Ultraviolet Wavelengths from Space. Part I: Concepts and Instrumentation. <i>Space Science Reviews</i> , 2004, 111, 415-480.	3.7	32
80	On resonant interactions of ions with plasma waves in a reduced quasi-linear theory. <i>Nonlinear Processes in Geophysics</i> , 2002, 9, 69-74.	0.6	7
81	Solar orbiter, a high-resolution mission to the sun and inner heliosphere. <i>Advances in Space Research</i> , 2002, 29, 2027-2040.	1.2	17
82	Kinetic Results for Ions in the Solar Corona with Waveâ€™Particle Interactions and Coulomb Collisions. <i>Astrophysical Journal</i> , 2002, 568, 1030-1042.	1.6	52
83	A semi-kinetic model of wave-ion interaction in the solar corona. <i>Geophysical Research Letters</i> , 2001, 28, 1917-1920.	1.5	41
84	Solar Origin and Interplanetary Evolution of Stream Interfaces. <i>Space Science Reviews</i> , 1999, 89, 7-20.	3.7	40
85	The Solar Origin of Corotating Interaction Regions and Their Formation in the Inner Heliosphere. <i>Space Science Reviews</i> , 1999, 89, 141-178.	3.7	78
86	CIR Morphology, Turbulence, Discontinuities, and Energetic Particles. <i>Space Science Reviews</i> , 1999, 89, 179-220.	3.7	79
87	Cyclotron Heating of the Solar Corona. <i>Astrophysics and Space Science</i> , 1998, 264, 63-76.	0.5	12
88	Space mission for exploration of the Sun Mercury and inner Heliosphere (â€™InterHeliosâ€™). <i>Advances in Space Research</i> , 1998, 21, 275-289.	1.2	2
89	Elemental composition of the January 6, 1997, CME. <i>Geophysical Research Letters</i> , 1998, 25, 2557-2560.	1.5	27
90	Solitons in multi-ion plasmas. <i>Journal of Plasma Physics</i> , 1998, 60, 845-859.	0.7	6

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91	Detection of 55–80 keV Hydrogen Atoms of Heliospheric Origin by CELIAS/HSTOF onSOHO. <i>Astrophysical Journal</i> , 1998, 503, 916-922.	1.6	86
92	The Solar Corona above Polar Coronal Holes as Seen by SUMER onSOHO. <i>Astrophysical Journal</i> , 1998, 500, 1023-1038.	1.6	254
93	Ion Temperatures in a Solar Polar Coronal Hole Observed by Sumer onSOHO. <i>Astrophysical Journal</i> , 1998, 503, 475-482.	1.6	122
94	Linear mode analysis in multi-ion plasmas. <i>Journal of Plasma Physics</i> , 1997, 58, 205-221.	0.7	27
95	Venus tail ray observation near Earth. <i>Geophysical Research Letters</i> , 1997, 24, 1163-1166.	1.5	31
96	Intermittency, non-Gaussian statistics and fractal scaling of MHD fluctuations in the solar wind. <i>Nonlinear Processes in Geophysics</i> , 1997, 4, 101-124.	0.6	161
97	Title is missing!. <i>Solar Physics</i> , 1997, 171, 363-391.	1.0	198
98	Solar Wind and Chromospheric Network. <i>Solar Physics</i> , 1997, 176, 87-106.	1.0	63
99	Pressure enhancement associated with meridional flow in high-speed solar wind: possible evidence for an interplanetary magnetic flux rope. <i>Annales Geophysicae</i> , 1997, 15, 137-142.	0.6	7
100	Multifractal scaling of the kinetic energy flux in solar wind turbulence. <i>Annales Geophysicae</i> , 1996, 14, 259-269.	0.6	53
101	An extended structure-function model and its application to the analysis of solar wind intermittency properties. <i>Annales Geophysicae</i> , 1996, 14, 270-285.	0.6	53
102	Spatial transport and spectral transfer of solar wind turbulence composed of Alfvén waves and convective structures I: The theoretical model. <i>Annales Geophysicae</i> , 1995, 13, 459-474.	0.6	12
103	SUMER - Solar Ultraviolet Measurements of Emitted Radiation. <i>Solar Physics</i> , 1995, 162, 189-231.	1.0	689
104	CELIAS - Charge, Element and Isotope Analysis System for SOHO. <i>Solar Physics</i> , 1995, 162, 441-481.	1.0	272
105	MHD structures, waves and turbulence in the solar wind: Observations and theories. <i>Space Science Reviews</i> , 1995, 73, 1-210.	3.7	891
106	Radial gradients of ion densities and temperatures derived from SWICS/Ulysses observations. <i>Geophysical Research Letters</i> , 1995, 22, 2445-2448.	1.5	12
107	Non-Gaussian probability distributions of solar wind fluctuations. <i>Annales Geophysicae</i> , 1994, 12, 1127-1138.	0.6	138
108	Diffusive fractionation in the chromosphere. <i>Space Science Reviews</i> , 1994, 70, 341-346.	3.7	2

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109	Transfer equations for spectral densities of inhomogeneous MHD turbulence. Journal of Plasma Physics, 1990, 44, 103-122.	0.7	50
110	The dependence of MHD turbulence spectra on the inner solar wind stream structure near solar minimum. Geophysical Research Letters, 1990, 17, 283-286.	1.5	60
111	Ions of martian origin and plasma sheet in the martian magnetosphere: initial results of the TAUS experiment. Nature, 1989, 341, 612-614.	13.7	158
112	Dynamics of correlation functions with Elsässer variables for inhomogeneous MHD turbulence. Journal of Plasma Physics, 1989, 41, 479-491.	0.7	114
113	Collisional transfer of energy and momentum between drifting tri-Maxwellians. Journal of Plasma Physics, 1986, 35, 473-482.	0.7	4
114	Comparison of the Bhatnagar-Gross-Krook approximation with the exact Coulomb collision operator. Physical Review A, 1986, 34, 533-540.	1.0	18
115	Coulomb collision rates for self-similar and kappa distributions. Physics of Fluids, 1985, 28, 1379.	1.4	29
116	Determination of the solar wind angular momentum flux from the HELIOS data - an observational test of the Weber and Davis theory. Astrophysical Journal, 1983, 271, 335.	1.6	94
117	Lower hybrid waves in the solar wind. Geophysical Research Letters, 1982, 9, 1155-1158.	1.5	18
118	Resonant wave acceleration of minor ions in the solar wind. Astrophysics and Space Science, 1982, 81, 295-314.	0.5	41
119	Determination of wave growth from measured distribution functions and transport theory. Journal of Plasma Physics, 1980, 23, 91-113.	0.7	93
120	Magnetic and electric properties of the Hubbard model for the fcc lattice. Physical Review B, 1978, 17, 2221-2232.	1.1	5
121	One-dimensional Hubbard model with nearest and second nearest neighbour hopping in the Hartree-Fock approximation. Journal of Physics F: Metal Physics, 1977, 7, 401-406.	1.6	6
122	Thermodynamics of a two-band doubly degenerate Hubbard model in the half-filled case. Physica Status Solidi (B): Basic Research, 1976, 78, K39.	0.7	2
123	Electrical conductivity of a doubly-degenerate Hubbard-model. Physics Letters, Section A: General, Atomic and Solid State Physics, 1976, 59, 293-294.	0.9	3
124	Force-force correlation function method for the ideal resistance of the Hubbard model. Journal of Physics C: Solid State Physics, 1976, 9, L117-L120.	1.5	3
125	A new upper bound for the free energy of the Hubbard model based on the cluster approach. Physica Status Solidi (B): Basic Research, 1975, 69, K149.	0.7	2
126	On the frequency-dependent conductivity and the current operator of the Hubbard model. Physica Status Solidi (B): Basic Research, 1975, 72, K103.	0.7	6



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127	Thermodynamics of a Two-Band Hubbard Model. <i>Physica Status Solidi (B): Basic Research</i> , 1974, 65, 403-410.	0.7	6
128	Electrical Conduction in Narrow Energy Bands. <i>Zeitschrift Fur Naturforschung - Section A Journal of Physical Sciences</i> , 1974, 29, 1655-1659.	0.7	4
129	Fermion Colour and Flavour Originating from Multiple Representations of the Lorentz Group and Clifford Algebra. <i>Physical Science International Journal</i> , 0, , 1-13.	0.3	5