

James Matthews

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115
papers

17,900
citations

47
h-index

120
g-index

120
ext. papers

19,913
ext. citations

4.9
avg, IF

4.16
L-index

#	Paper	IF	Citations
115	Review of Particle Physics*. <i>Physical Review D</i> , 2012 , 86,	4.9	4786
114	Review of Particle Physics*. <i>Physical Review D</i> , 2018 , 98,	4.9	4401
113	Observation of a neutrino burst in coincidence with supernova 1987A in the Large Magellanic Cloud. <i>Physical Review Letters</i> , 1987 , 58, 1494-1496	7.4	1149
112	Correlation of the highest-energy cosmic rays with nearby extragalactic objects. <i>Science</i> , 2007 , 318, 938-943	33.3	558
111	Properties and performance of the prototype instrument for the Pierre Auger Observatory. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2004 , 523, 50-95	1.2	516
110	Observation of the suppression of the flux of cosmic rays above 4×10^{19} eV. <i>Physical Review Letters</i> , 2008 , 101, 061101	7.4	443
109	Measurement of the depth of maximum of extensive air showers above 10^{18} eV. <i>Physical Review Letters</i> , 2010 , 104, 091101	7.4	387
108	Measurement of atmospheric neutrino composition with the IMB-3 detector. <i>Physical Review Letters</i> , 1991 , 66, 2561-2564	7.4	365
107	Measurement of the energy spectrum of cosmic rays above 10^{18} eV using the Pierre Auger Observatory. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 2010 , 685, 239-246	4.2	328
106	Correlation of the highest-energy cosmic rays with the positions of nearby active galactic nuclei. <i>Astroparticle Physics</i> , 2008 , 29, 188-204	2.4	262
105	Depth of maximum of air-shower profiles at the Pierre Auger Observatory. I. Measurements at energies above $10^{17.8}$ eV. <i>Physical Review D</i> , 2014 , 90,	4.9	195
104	Observation of a large-scale anisotropy in the arrival directions of cosmic rays above 8×10^{17} eV. <i>Science</i> , 2017 , 357, 1266-1270	33.3	172
103	A Heitler model of extensive air showers. <i>Astroparticle Physics</i> , 2005 , 22, 387-397	2.4	169
102	Depth of maximum of air-shower profiles at the Pierre Auger Observatory. II. Composition implications. <i>Physical Review D</i> , 2014 , 90,	4.9	157
101	Measurement of the Cosmic-Ray Energy Spectrum and Composition from 10^{17} to $10^{18.3}$ eV Using a Hybrid Technique. <i>Astrophysical Journal</i> , 2001 , 557, 686-699	4.7	153
100	Evidence for changing of cosmic ray composition between 10^{17} and 10^{18} eV from multicomponent measurements. <i>Physical Review Letters</i> , 2000 , 84, 4276-9	7.4	147
99	Upper limit on the cosmic-ray photon flux above 10^{19} eV using the surface detector of the Pierre Auger Observatory. <i>Astroparticle Physics</i> , 2008 , 29, 243-256	2.4	141

98	Trigger and aperture of the surface detector array of the Pierre Auger Observatory. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2010 , 613, 29-39	1.2	121
97	Upper limit on the diffuse flux of ultrahigh energy tau neutrinos from the Pierre Auger Observatory. <i>Physical Review Letters</i> , 2008 , 100, 211101	7.4	117
96	SEARCHES FOR ANISOTROPIES IN THE ARRIVAL DIRECTIONS OF THE HIGHEST ENERGY COSMIC RAYS DETECTED BY THE PIERRE AUGER OBSERVATORY. <i>Astrophysical Journal</i> , 2015 , 804, 15	4.7	113
95	Calculation of atmospheric neutrino-induced backgrounds in a nucleon-decay search. <i>Physical Review Letters</i> , 1986 , 57, 1986-1989	7.4	112
94	Improved limit to the diffuse flux of ultrahigh energy neutrinos from the Pierre Auger Observatory. <i>Physical Review D</i> , 2015 , 91,	4.9	108
93	Testing Hadronic Interactions at Ultrahigh Energies with Air Showers Measured by the Pierre Auger Observatory. <i>Physical Review Letters</i> , 2016 , 117, 192001	7.4	107
92	An Indication of Anisotropy in Arrival Directions of Ultra-high-energy Cosmic Rays through Comparison to the Flux Pattern of Extragalactic Gamma-Ray Sources. <i>Astrophysical Journal Letters</i> , 2018 , 853, L29	7.9	102
91	Muons in air showers at the Pierre Auger Observatory: Mean number in highly inclined events. <i>Physical Review D</i> , 2015 , 91,	4.9	100
90	Upper limit on the cosmic-ray photon fraction at EeV energies from the Pierre Auger Observatory. <i>Astroparticle Physics</i> , 2009 , 31, 399-406	2.4	99
89	Search for muon neutrino oscillations with the Irvine-Michigan-Brookhaven detector. <i>Physical Review Letters</i> , 1992 , 69, 1010-1013	7.4	99
88	Angular distribution of events from SN1987A. <i>Physical Review D</i> , 1988 , 37, 3361-3363	4.9	98
87	Combined fit of spectrum and composition data as measured by the Pierre Auger Observatory. <i>Journal of Cosmology and Astroparticle Physics</i> , 2017 , 2017, 038-038	6.4	95
86	The cosmic ray energy spectrum between 10 ¹⁴ and 10 ¹⁶ eV. <i>Astroparticle Physics</i> , 1999 , 10, 291-302	2.4	90
85	Limit on the diffuse flux of ultrahigh energy tau neutrinos with the surface detector of the Pierre Auger Observatory. <i>Physical Review D</i> , 2009 , 79,	4.9	81
84	An upper limit to the photon fraction in cosmic rays above 10 ¹⁹ eV from the Pierre Auger Observatory. <i>Astroparticle Physics</i> , 2007 , 27, 155-168	2.4	77
83	A large air shower array to search for astrophysical sources emitting Υ -rays with energies $\geq 10^{14}$ eV. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 1994 , 346, 329-352	1.2	73
82	Limits on the Isotropic Diffuse Flux of Ultrahigh Energy Υ Radiation. <i>Physical Review Letters</i> , 1997 , 79, 1805-1808	7.4	68
81	Measurement of the Radiation Energy in the Radio Signal of Extensive Air Showers as a Universal Estimator of Cosmic-Ray Energy. <i>Physical Review Letters</i> , 2016 , 116, 241101	7.4	65

80	Search for first harmonic modulation in the right ascension distribution of cosmic rays detected at the Pierre Auger Observatory. <i>Astroparticle Physics</i> , 2011 , 34, 627-639	2.4	64
79	Probing the radio emission from air showers with polarization measurements. <i>Physical Review D</i> , 2014 , 89,	4.9	63
78	Energy estimation of cosmic rays with the Engineering Radio Array of the Pierre Auger Observatory. <i>Physical Review D</i> , 2016 , 93,	4.9	62
77	The cosmic ray composition between 1014 and 1016 eV. <i>Astroparticle Physics</i> , 1999 , 12, 1-17	2.4	59
76	Limits on the flux of energetic neutrinos from the sun. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 1987 , 188, 388-392	4.2	59
75	Evidence for a mixed mass composition at the ankle in the cosmic-ray spectrum. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 2016 , 762, 288-295	4.2	59
74	SEARCHES FOR LARGE-SCALE ANISOTROPY IN THE ARRIVAL DIRECTIONS OF COSMIC RAYS DETECTED ABOVE ENERGY OF 1019eV AT THE PIERRE AUGER OBSERVATORY AND THE TELESCOPE ARRAY. <i>Astrophysical Journal</i> , 2014 , 794, 172	4.7	56
73	An upper limit on the flux of extraterrestrial neutrinos. <i>Astrophysical Journal</i> , 1987 , 315, 420	4.7	54
72	Inferences on mass composition and tests of hadronic interactions from 0.3 to 100 EeV using the water-Cherenkov detectors of the Pierre Auger Observatory. <i>Physical Review D</i> , 2017 , 96,	4.9	53
71	The Central Laser Facility at the Pierre Auger Observatory. <i>Journal of Instrumentation</i> , 2006 , 1, P11003-P11003	4.9	49
70	Constraints on Gamma-Ray Emission from the Galactic Plane at 300 TeV. <i>Astrophysical Journal</i> , 1998 , 493, 175-179	4.7	47
69	Large-scale Cosmic-Ray Anisotropies above 4 EeV Measured by the Pierre Auger Observatory. <i>Astrophysical Journal</i> , 2018 , 868, 4	4.7	47
68	The composition of cosmic rays at the knee. <i>Astroparticle Physics</i> , 2002 , 18, 129-150	2.4	46
67	Muons in air showers at the Pierre Auger Observatory: Measurement of atmospheric production depth. <i>Physical Review D</i> , 2014 , 90,	4.9	44
66	Advanced functionality for radio analysis in the Offline software framework of the Pierre Auger Observatory. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2011 , 635, 92-102	1.2	44
65	Anisotropy studies around the galactic centre at EeV energies with the Auger Observatory. <i>Astroparticle Physics</i> , 2007 , 27, 244-253	2.4	44
64	LARGE SCALE DISTRIBUTION OF ULTRA HIGH ENERGY COSMIC RAYS DETECTED AT THE PIERRE AUGER OBSERVATORY WITH ZENITH ANGLES UP TO 80°. <i>Astrophysical Journal</i> , 2015 , 802, 111	4.7	43
63	VHE gamma rays from Hercules X-1. <i>Astrophysical Journal</i> , 1988 , 328, L9	4.7	42

62	Search for nucleon decay using the IMB-3 detector. <i>Physical Review D</i> , 1999 , 59,	4.9	41
61	IMB-3: a large water Cherenkov detector for nucleon decay and neutrino interactions. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 1993 , 324, 363-382	1.2	40
60	The exposure of the hybrid detector of the Pierre Auger Observatory. <i>Astroparticle Physics</i> , 2011 , 34, 368-381	2.4	39
59	A measurement of the average longitudinal development profile of cosmic ray air showers between 1017 and 1018 eV. <i>Astroparticle Physics</i> , 2001 , 16, 1-11	2.4	38
58	Search for proton decay into $e^+ \pi^0$ in the IMB-3 detector. <i>Physical Review D</i> , 1990 , 42, 2974-2976	4.9	34
57	Atmospheric effects on extensive air showers observed with the surface detector of the Pierre Auger observatory. <i>Astroparticle Physics</i> , 2009 , 32, 89-99	2.4	33
56	Search for diffuse cosmic gamma rays above 200 TeV. <i>Astrophysical Journal</i> , 1991 , 375, 202	4.7	33
55	Search for photons with energies above 1018eV using the hybrid detector of the Pierre Auger Observatory. <i>Journal of Cosmology and Astroparticle Physics</i> , 2017 , 2017, 009-009	6.4	32
54	Search for first-generation leptoquarks in p-bar p collisions at $\sqrt{s} = 1.8$ TeV. <i>Physical Review D</i> , 1993 , 48, R3939-R3944	4.9	30
53	Ultrahigh-energy neutrino follow-up of gravitational wave events GW150914 and GW151226 with the Pierre Auger Observatory. <i>Physical Review D</i> , 2016 , 94,	4.9	30
52	High statistics search for ultrahigh energy γ -ray emission from Cygnus X-3 and Hercules X-1. <i>Physical Review D</i> , 1997 , 55, 1714-1731	4.9	26
51	Search for multitrack nucleon decay. <i>Physical Review Letters</i> , 1988 , 61, 2522-2525	7.4	26
50	Features of the Energy Spectrum of Cosmic Rays above $2.5 \cdot 10^{18}$ eV Using the Pierre Auger Observatory. <i>Physical Review Letters</i> , 2020 , 125, 121106	7.4	26
49	Probing the origin of ultra-high-energy cosmic rays with neutrinos in the EeV energy range using the Pierre Auger Observatory. <i>Journal of Cosmology and Astroparticle Physics</i> , 2019 , 2019, 022-022	6.4	25
48	A Northern Sky Survey for Astrophysical Point Sources of 100 TeV Gamma Radiation. <i>Astrophysical Journal</i> , 1993 , 417, 742	4.7	25
47	A SEARCH FOR POINT SOURCES OF EeV PHOTONS. <i>Astrophysical Journal</i> , 2014 , 789, 160	4.7	23
46	A Search for Ultra-High-Energy Gamma-Ray Emission from the Crab Nebula and Pulsar. <i>Astrophysical Journal</i> , 1997 , 481, 313-326	4.7	23
45	Measurement of the cosmic-ray energy spectrum above $2.5 \cdot 10^{18}$ eV using the Pierre Auger Observatory. <i>Physical Review D</i> , 2020 , 102,	4.9	22

44	Search for discrete sources of 100 TeV gamma radiation. <i>Physical Review D</i> , 1992 , 45, 4385-4391	4.9	18
43	Observation of inclined EeV air showers with the radio detector of the Pierre Auger Observatory. <i>Journal of Cosmology and Astroparticle Physics</i> , 2018 , 2018, 026-026	6.4	18
42	Cosmic-Ray Anisotropies in Right Ascension Measured by the Pierre Auger Observatory. <i>Astrophysical Journal</i> , 2020 , 891, 142	4.7	17
41	Underground search for muons correlated with Cygnus X-3. <i>Physical Review D</i> , 1987 , 36, 30-36	4.9	17
40	Calibration of the logarithmic-periodic dipole antenna (LPDA) radio stations at the Pierre Auger Observatory using an octocopter. <i>Journal of Instrumentation</i> , 2017 , 12, T10005-T10005	1	16
39	A waveshifter light collector for a water Cherenkov detector. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 1987 , 261, 540-542	1.2	16
38	Supernova neutrino burst detection with the Deep Underground Neutrino Experiment. <i>European Physical Journal C</i> , 2021 , 81, 1	4.2	16
37	A search for nucleon decay with multiple muon decays. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 1989 , 224, 348-352	4.2	14
36	Neutrinos from SN1987a in the IMB detector. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 1988 , 264, 28-31	1.2	13
35	Muon counting using silicon photomultipliers in the AMIGA detector of the Pierre Auger observatory. <i>Journal of Instrumentation</i> , 2017 , 12, P03002-P03002	1	12
34	Azimuthal asymmetry in the risetime of the surface detector signals of the Pierre Auger Observatory. <i>Physical Review D</i> , 2016 , 93,	4.9	12
33	Observation of the shadows of the Moon and Sun using 100 TeV cosmic rays. <i>Physical Review D</i> , 1994 , 49, 1171-1177	4.9	12
32	A TARGETED SEARCH FOR POINT SOURCES OF EeV NEUTRONS. <i>Astrophysical Journal Letters</i> , 2014 , 789, L34	7.9	11
31	Absolute photometric calibration of large aperture optical systems. <i>Astroparticle Physics</i> , 2004 , 20, 653-659	6.4	11
30	Direct measurement of the muonic content of extensive air showers between (2×10^{17}) and (2×10^{18}) eV at the Pierre Auger Observatory. <i>European Physical Journal C</i> , 2020 , 80, 1	4.2	11
29	A Targeted Search for Point Sources of EeV Photons with the Pierre Auger Observatory. <i>Astrophysical Journal Letters</i> , 2017 , 837, L25	7.9	10
28	Data-driven estimation of the invisible energy of cosmic ray showers with the Pierre Auger Observatory. <i>Physical Review D</i> , 2019 , 100,	4.9	10
27	Multi-resolution anisotropy studies of ultrahigh-energy cosmic rays detected at the Pierre Auger Observatory. <i>Journal of Cosmology and Astroparticle Physics</i> , 2017 , 2017, 026-026	6.4	9

26	Search for patterns by combining cosmic-ray energy and arrival directions at the Pierre Auger Observatory. <i>European Physical Journal C</i> , 2015 , 75, 269	4.2	9
25	The Haleakala gamma ray observatory. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 1988 , 269, 297-304	1.2	9
24	Search for ultrarelativistic magnetic monopoles with the Pierre Auger observatory. <i>Physical Review D</i> , 2016 , 94,	4.9	9
23	Limits on point-like sources of ultra-high-energy neutrinos with the Pierre Auger Observatory. <i>Journal of Cosmology and Astroparticle Physics</i> , 2019 , 2019, 004-004	6.4	8
22	Experimental upper limit to the galactic stellar-collapse rate. <i>Physical Review Letters</i> , 1989 , 62, 2069-2072	4	7
21	Search for gamma rays above 1014 eV from Cygnus X-3 during the June and July 1989 radio outbursts. <i>Physical Review Letters</i> , 1989 , 63, 2329-2332	7.4	7
20	A Search for Ultrahigh-Energy Gamma Rays from EGRET-detected Active Galactic Nuclei Using CASA-MIA. <i>Astrophysical Journal</i> , 1996 , 469, 572	4.7	7
19	Impact of atmospheric effects on the energy reconstruction of air showers observed by the surface detectors of the Pierre Auger Observatory. <i>Journal of Instrumentation</i> , 2017 , 12, P02006-P02006	1	6
18	Search for magnetically-induced signatures in the arrival directions of ultra-high-energy cosmic rays measured at the Pierre Auger Observatory. <i>Journal of Cosmology and Astroparticle Physics</i> , 2020 , 2020, 017-017	6.4	6
17	Origin of atmospheric aerosols at the Pierre Auger Observatory using studies of air mass trajectories in South America. <i>Atmospheric Research</i> , 2014 , 149, 120-135	5.4	6
16	Measurement of the Fluctuations in the Number of Muons in Extensive Air Showers with the Pierre Auger Observatory. <i>Physical Review Letters</i> , 2021 , 126, 152002	7.4	6
15	Measurement of the average shape of longitudinal profiles of cosmic-ray air showers at the Pierre Auger Observatory. <i>Journal of Cosmology and Astroparticle Physics</i> , 2019 , 2019, 018-018	6.4	5
14	Reconstruction of events recorded with the surface detector of the Pierre Auger Observatory. <i>Journal of Instrumentation</i> , 2020 , 15, P10021-P10021	1	5
13	Transport of High-energy Charged Particles through Spatially Intermittent Turbulent Magnetic Fields. <i>Astrophysical Journal</i> , 2020 , 892, 114	4.7	5
12	Calibration of the IMB detector. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 1995 , 352, 629-639	1.2	5
11	Spectral calibration of the fluorescence telescopes of the Pierre Auger Observatory. <i>Astroparticle Physics</i> , 2017 , 95, 44-56	2.4	4
10	Search for compact sources of cosmic photons above 200 TeV. <i>Physical Review D</i> , 1992 , 46, 3248-3255	4.9	4
9	Search for >200 TeV photons from Cygnus X-3 in 1988 and 1989. <i>Physical Review D</i> , 1990 , 42, 281-288	4.9	3

8	Deep-learning based reconstruction of the shower maximum X_{\max} using the water-Cherenkov detectors of the Pierre Auger Observatory. <i>Journal of Instrumentation</i> , 2021 , 16, P07019	1	3
7	A Search for Ultra-high-energy Neutrinos from TXS 0506+056 Using the Pierre Auger Observatory. <i>Astrophysical Journal</i> , 2020 , 902, 105	4-7	2
6	Studies on the response of a water-Cherenkov detector of the Pierre Auger Observatory to atmospheric muons using an RPC hodoscope. <i>Journal of Instrumentation</i> , 2020 , 15, P09002-P09002	1	2
5	Energy spectra and composition near the knee. <i>Nuclear Physics, Section B, Proceedings Supplements</i> , 1999 , 75, 241-243		1
4	Testing effects of Lorentz invariance violation in the propagation of astroparticles with the Pierre Auger Observatory. <i>Journal of Cosmology and Astroparticle Physics</i> , 2022 , 2022, 023	6.4	1
3	Extraction of the muon signals recorded with the surface detector of the Pierre Auger Observatory using recurrent neural networks. <i>Journal of Instrumentation</i> , 2021 , 16, P07016	1	1
2	A search for diffuse sources of ultra high energy gamma-rays. <i>Nuclear Physics, Section B, Proceedings Supplements</i> , 1996 , 48, 483-484		
1	Neutrino astrophysics with IMB: past, present, and future. <i>Nuclear Physics, Section B, Proceedings Supplements</i> , 1988 , 3, 463-470		