

Sergio Pastor

List of Publications by Year in descending order

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135
papers

10,359
citations

34105

52
h-index

31849

101
g-index

138
all docs

138
docs citations

138
times ranked

4841
citing authors

#	ARTICLE	IF	CITATIONS
1	Massive neutrinos and cosmology. Physics Reports, 2006, 429, 307-379.	25.6	796
2	Correlation of the Highest-Energy Cosmic Rays with Nearby Extragalactic Objects. Science, 2007, 318, 938-943.	12.6	647
3	Relic neutrino decoupling including flavour oscillations. Nuclear Physics B, 2005, 729, 221-234.	2.5	597
4	Observation of the Suppression of the Flux of Cosmic Rays above 4×10^{19} eV. Physical Review Letters, 2008, 101, 061101.	7.8	500
5	Measurement of the Depth of Maximum of Extensive Air Showers above 18×10^{18} eV. Physical Review Letters, 2010, 104, 091101.	7.8	429
6	Measurement of the energy spectrum of cosmic rays above 1018 eV using the Pierre Auger Observatory. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2010, 685, 239-246.	4.1	357
7	Cosmological bounds on neutrino degeneracy improved by flavor oscillations. Nuclear Physics B, 2002, 632, 363-382.	2.5	305
8	Correlation of the highest-energy cosmic rays with the positions of nearby active galactic nuclei. Astroparticle Physics, 2008, 29, 188-204.	4.3	305
9	The fluorescence detector of the Pierre Auger Observatory. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2010, 620, 227-251.	1.6	275
10	Update on the correlation of the highest energy cosmic rays with nearby extragalactic matter. Astroparticle Physics, 2010, 34, 314-326.	4.3	270
11	A White Paper on keV sterile neutrino Dark Matter. Journal of Cosmology and Astroparticle Physics, 2017, 2017, 025-025.	5.4	256
12	Relic neutrino decoupling with flavour oscillations revisited. Journal of Cosmology and Astroparticle Physics, 2016, 2016, 051-051.	5.4	245
13	Measurement of the Proton-Air Cross Section at 57×10^{19} eV. The Pierre Auger Observatory. Physical Review Letters, 2012, 109, 062002.	7.8	212
14	A precision calculation of the effective number of cosmological neutrinos. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2002, 534, 8-16.	4.1	187
15	Bounds on very low reheating scenarios after Planck. Physical Review D, 2015, 92, .	4.7	181
16	Upper limit on the cosmic-ray photon flux above 1019eV using the surface detector of the Pierre Auger Observatory. Astroparticle Physics, 2008, 29, 243-256.	4.3	161
17	Trigger and aperture of the surface detector array of the Pierre Auger Observatory. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2010, 613, 29-39.	1.6	151
18	Neutrino Mass from Cosmology. Advances in High Energy Physics, 2012, 2012, 1-34.	1.1	145

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19	Upper Limit on the Diffuse Flux of Ultrahigh Energy Tau Neutrinos from the Pierre Auger Observatory. Physical Review Letters, 2008, 100, 211101.	7.8	141
20	Role of dense matter in collective supernova neutrino transformations. Physical Review D, 2008, 78, .	4.7	137
21	Physics of synchronized neutrino oscillations caused by self-interactions. Physical Review D, 2002, 65, .	4.7	132
22	Flavor Oscillations in the Supernova Hot Bubble Region: Nonlinear Effects of Neutrino Background. Physical Review Letters, 2002, 89, 191101.	7.8	127
23	Decoherence in supernova neutrino transformations suppressed by deleptonization. Physical Review D, 2007, 76, .	4.7	123
24	Upper limit on the cosmic-ray photon fraction at EeV energies from the Pierre Auger Observatory. Astroparticle Physics, 2009, 31, 399-406.	4.3	117
25	Constraining the window on sterile neutrinos as warm dark matter. Monthly Notices of the Royal Astronomical Society, 2002, 333, 544-546.	4.4	114
26	Probing neutrino masses with CMB lensing extraction. Physical Review D, 2006, 73, .	4.7	112
27	Towards a precision calculation of the effective number of neutrinos N_{eff} in the Standard Model. Part II. Neutrino decoupling in the presence of flavour oscillations and finite-temperature QED. Journal of Cosmology and Astroparticle Physics, 2021, 2021, 073.	5.4	111
28	Neutrino cosmology and Planck. New Journal of Physics, 2014, 16, 065002.	2.9	110
29	Limit on the diffuse flux of ultrahigh energy tau neutrinos with the surface detector of the Pierre Auger Observatory. Physical Review D, 2009, 79, .	4.7	99
30	Antennas for the detection of radio emission pulses from cosmic-ray induced air showers at the Pierre Auger Observatory. Journal of Instrumentation, 2012, 7, P10011-P10011.	1.2	95
31	Current cosmological bounds on neutrino masses and relativistic relics. Physical Review D, 2004, 69, .	4.7	93
32	Probing neutrino masses with future galaxy redshift surveys. Physical Review D, 2004, 70, .	4.7	88
33	Probing the radio emission from air showers with polarization measurements. Physical Review D, 2014, 89, .	4.7	85
34	Neutrino physics with the PTOLEMY project: active neutrino properties and the light sterile case. Journal of Cosmology and Astroparticle Physics, 2019, 2019, 047-047.	5.4	85
35	A study of the effect of molecular and aerosol conditions in the atmosphere on air fluorescence measurements at the Pierre Auger Observatory. Astroparticle Physics, 2010, 33, 108-129.	4.3	84
36	Cosmological implications of a relic neutrino asymmetry. Physical Review D, 1999, 60, .	4.7	83

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37	Updated BBN bounds on the cosmological lepton asymmetry for non-zero $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si1.gif" overflow="scroll" \rangle \langle \text{mml:msub} \rangle \langle \text{mml:mi} \rangle \hat{\rho} \langle \text{mml:mi} \rangle \langle \text{mml:mn} \rangle 13 \langle \text{mml:mn} \rangle \langle \text{mml:msub} \rangle \langle \text{mml:math} \rangle$. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2012, 708, 1-5.	4.1	79
38	Search for first harmonic modulation in the right ascension distribution of cosmic rays detected at the Pierre Auger Observatory. Astroparticle Physics, 2011, 34, 627-639.	4.3	73
39	Non equilibrium spectra of degenerate relic neutrinos. Nuclear Physics B, 2000, 590, 539-561.	2.5	71
40	Muons in air showers at the Pierre Auger Observatory: Measurement of atmospheric production depth. Physical Review D, 2014, 90, .	4.7	69
41	CONSTRAINTS ON THE ORIGIN OF COSMIC RAYS ABOVE 10^{18} eV FROM LARGE-SCALE ANISOTROPY SEARCHES IN DATA OF THE PIERRE AUGER OBSERVATORY. Astrophysical Journal Letters, 2013, 762, L13.	8.3	67
42	Description of atmospheric conditions at the Pierre Auger Observatory using the Global Data Assimilation System (GDAS). Astroparticle Physics, 2012, 35, 591-607.	4.3	66
43	PARthENoPE reloaded. Computer Physics Communications, 2018, 233, 237-242.	7.5	66
44	Thermalisation of sterile neutrinos in the early universe in the 3+1 scheme with full mixing matrix. Journal of Cosmology and Astroparticle Physics, 2019, 2019, 014-014.	5.4	65
45	Effects of non-standard neutrino-electron interactions on relic neutrino decoupling. Nuclear Physics B, 2006, 756, 100-116.	2.5	56
46	Measuring the cosmological background of relativistic particles with the Wilkinson Microwave Anisotropy Probe. Physical Review D, 2003, 67, .	4.7	55
47	Relic Density of Neutrinos with Primordial Asymmetries. Physical Review Letters, 2009, 102, 241302.	7.8	55
48	SEARCH FOR POINT-LIKE SOURCES OF ULTRA-HIGH ENERGY NEUTRINOS AT THE PIERRE AUGER OBSERVATORY AND IMPROVED LIMIT ON THE DIFFUSE FLUX OF TAU NEUTRINOS. Astrophysical Journal Letters, 2012, 755, L4.	8.3	55
49	Mu-tau neutrino refraction and collective three-flavor transformations in supernovae. Physical Review D, 2008, 77, .	4.7	54
50	The exposure of the hybrid detector of the Pierre Auger Observatory. Astroparticle Physics, 2011, 34, 368-381.	4.3	54
51	Advanced functionality for radio analysis in the Offline software framework of the Pierre Auger Observatory. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2011, 635, 92-102.	1.6	52
52	Constraining the cosmic radiation density due to lepton number with Big Bang Nucleosynthesis. Journal of Cosmology and Astroparticle Physics, 2011, 2011, 035-035.	5.4	52
53	Cosmological lepton asymmetry with a nonzero mixing angle $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" \rangle \langle \text{mml:msub} \rangle \langle \text{mml:mi} \rangle \hat{\rho} \langle \text{mml:mi} \rangle \langle \text{mml:mn} \rangle 13 \langle \text{mml:mn} \rangle \langle \text{mml:msub} \rangle \langle \text{mml:math} \rangle$. Physical Review D, 2012, 86, .	4.7	52
54	Search for ultrahigh energy neutrinos in highly inclined events at the Pierre Auger Observatory. Physical Review D, 2011, 84, .	4.7	51

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55	Reconstruction of inclined air showers detected with the Pierre Auger Observatory. <i>Journal of Cosmology and Astroparticle Physics</i> , 2014, 2014, 019-019.	5.4	49
56	Spectral Distortion of Cosmic Microwave Background Radiation by Scattering on Hot Electrons: Exact Calculations. <i>Astrophysical Journal</i> , 2001, 554, 74-84.	4.5	47
57	LARGE-SCALE DISTRIBUTION OF ARRIVAL DIRECTIONS OF COSMIC RAYS DETECTED ABOVE 10^{18} eV AT THE PIERRE AUGER OBSERVATORY. <i>Astrophysical Journal, Supplement Series</i> , 2012, 203, 34.	7.7	44
58	Atmospheric effects on extensive air showers observed with the surface detector of the Pierre Auger observatory. <i>Astroparticle Physics</i> , 2009, 32, 89-99.	4.3	43
59	Neutrino oscillations in the early universe: how can large lepton asymmetry be generated?. <i>Astroparticle Physics</i> , 2000, 14, 79-90.	4.3	39
60	Ultrahigh Energy Neutrinos at the Pierre Auger Observatory. <i>Advances in High Energy Physics</i> , 2013, 2013, 1-18.	1.1	39
61	First Measurement of Cluster Temperature Using the Thermal Sunyaev-Zeldovich Effect. <i>Astrophysical Journal</i> , 2002, 573, L69-L71.	4.5	38
62	Calculation of the local density of relic neutrinos. <i>Journal of Cosmology and Astroparticle Physics</i> , 2017, 2017, 034-034.	5.4	35
63	Measurement of the cosmic ray energy spectrum using hybrid events of the Pierre Auger Observatory. <i>European Physical Journal Plus</i> , 2012, 127, 1.	2.6	34
64	Bounds on the density of sources of ultra-high energy cosmic rays from the Pierre Auger Observatory. <i>Journal of Cosmology and Astroparticle Physics</i> , 2013, 2013, 009-009.	5.4	34
65	Search for signatures of magnetically-induced alignment in the arrival directions measured by the Pierre Auger Observatory. <i>Astroparticle Physics</i> , 2012, 35, 354-361.	4.3	32
66	Bounds on light sterile neutrino mass and mixing from cosmology and laboratory searches. <i>Physical Review D</i> , 2021, 104, .	4.7	32
67	Cosmology of the Randall-Sundrum model after dilaton stabilization. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 2000, 489, 411-419.	4.1	31
68	Do observations prove that cosmological neutrinos are thermally distributed?. <i>Physical Review D</i> , 2005, 71, .	4.7	31
69	A SEARCH FOR POINT SOURCES OF EeV PHOTONS. <i>Astrophysical Journal</i> , 2014, 789, 160.	4.5	29
70	A SEARCH FOR POINT SOURCES OF EeV NEUTRONS. <i>Astrophysical Journal</i> , 2012, 760, 148.	4.5	27
71	Interpretation of the depths of maximum of extensive air showers measured by the Pierre Auger Observatory. <i>Journal of Cosmology and Astroparticle Physics</i> , 2013, 2013, 026-026.	5.4	27
72	Constraining the invisible neutrino decay with KM3NeT-ORCA. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 2019, 789, 472-479.	4.1	27

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73	Primordial nucleosynthesis, majorons and heavy tau neutrinos. Nuclear Physics B, 1997, 496, 24-40.	2.5	25
74	The aperture for UHE tau neutrinos of the Auger fluorescence detector using a Digital Elevation Map. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2006, 634, 137-142.	4.1	24
75	The effect of the geomagnetic field on cosmic ray energy estimates and large scale anisotropy searches on data from the Pierre Auger Observatory. Journal of Cosmology and Astroparticle Physics, 2011, 2011, 022-022.	5.4	24
76	The rapid atmospheric monitoring system of the Pierre Auger Observatory. Journal of Instrumentation, 2012, 7, P09001-P09001.	1.2	24
77	Techniques for measuring aerosol attenuation using the Central Laser Facility at the Pierre Auger Observatory. Journal of Instrumentation, 2013, 8, P04009-P04009.	1.2	24
78	A design for an electromagnetic filter for precision energy measurements at the tritium endpoint. Progress in Particle and Nuclear Physics, 2019, 106, 120-131.	14.4	24
79	Disentangling neutrino-nucleon cross section and high energy neutrino flux with a $\langle \sigma_{\nu N} \rangle$ neutrino telescope. Physical Review D, 2008, 77, .	4.7	23
80	Bounds on neutrino transition magnetic moments in random magnetic fields. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1996, 369, 301-307.	4.1	20
81	Unstable massive tau-neutrinos and primordial nucleosynthesis. Nuclear Physics B, 1999, 548, 385-407.	2.5	20
82	Model independent constraints on mass-varying neutrino scenarios. Physical Review D, 2009, 80, .	4.7	18
83	Low-energy anti-neutrinos from the Sun. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1998, 423, 118-125.	4.1	17
84	Cosmological measurement of neutrino mass in the presence of leptonic asymmetry. Physical Review D, 2000, 62, .	4.7	17
85	An improved cosmological bound on the tau-neutrino mass. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1996, 383, 193-198.	4.1	16
86	On the full Boltzmann equations for leptogenesis. Journal of Cosmology and Astroparticle Physics, 2009, 2009, 035-035.	5.4	16
87	The Pierre Auger Observatory scaler mode for the study of solar activity modulation of galactic cosmic rays. Journal of Instrumentation, 2011, 6, P01003-P01003.	1.2	16
88	The Lateral Trigger Probability function for the Ultra-High Energy Cosmic Ray showers detected by the Pierre Auger Observatory. Astroparticle Physics, 2011, 35, 266-276.	4.3	16
89	Sensitivity on earth core and mantle densities using atmospheric neutrinos. Journal of Cosmology and Astroparticle Physics, 2009, 2009, 030-030.	5.4	14
90	A TARGETED SEARCH FOR POINT SOURCES OF EeV NEUTRONS. Astrophysical Journal Letters, 2014, 789, L34.	8.3	14

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91	Neutrino clustering in the Milky Way and beyond. Journal of Cosmology and Astroparticle Physics, 2020, 2020, 015-015.	5.4	14
92	New supernova constraints on active-sterile neutrino conversions. Astroparticle Physics, 1995, 3, 87-94.	4.3	13
93	Extraction of cluster parameters with future Sunyaev-Zel'dovich observations. Journal of Cosmology and Astroparticle Physics, 2003, 2003, 007-007.	5.4	11
94	Probing interactions within the dark matter sector via extra radiation contributions. Physical Review D, 2013, 87, .	4.7	11
95	Neutrino magnetic moments and low-energy solar neutrino-electron scattering experiments. Physical Review D, 1998, 59, .	4.7	10
96	Ultrahigh energy neutrinos in the Mediterranean: detecting $\hat{1}/2\hat{1}$, and $\hat{1}/2\hat{1}/4$ with a km ³ telescope. Journal of Cosmology and Astroparticle Physics, 2007, 2007, 007-007.	5.4	10
97	Anisotropy and chemical composition of ultra-high energy cosmic rays using arrival directions measured by the Pierre Auger Observatory. Journal of Cosmology and Astroparticle Physics, 2011, 2011, 022-022.	5.4	9
98	Identifying clouds over the Pierre Auger Observatory using infrared satellite data. Astroparticle Physics, 2013, 50-52, 92-101.	4.3	8
99	Bose-Einstein condensation at reheating. Physical Review D, 2001, 64, .	4.7	7
100	A potential test of the CP properties and Majorana nature of neutrinos. Nuclear Physics B, 2000, 566, 92-102.	2.5	6
101	A search for anisotropy in the arrival directions of ultra high energy cosmic rays recorded at the Pierre Auger Observatory. Journal of Cosmology and Astroparticle Physics, 2012, 2012, 040-040.	5.4	6
102	Origin of atmospheric aerosols at the Pierre Auger Observatory using studies of air mass trajectories in South America. Atmospheric Research, 2014, 149, 120-135.	4.1	6
103	Cosmological radiation density with non-standard neutrino-electron interactions. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2021, 820, 136508.	4.1	6
104	The MU-RAY project: Summary of the round-table discussions. Earth, Planets and Space, 2010, 62, 145-151.	2.5	5
105	Relic neutrino asymmetry, CMB and large-scale structure. Nuclear Physics, Section B, Proceedings Supplements, 2000, 81, 47-51.	0.4	4
106	Low-energy anti-neutrinos from the sun. Nuclear Physics, Section B, Proceedings Supplements, 1999, 70, 348-350.	0.4	3
107	Limits on the diffuse flux of ultra-high energy neutrinos using the Pierre Auger Observatory. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2012, 662, S113-S117.	1.6	3
108	Cosmological bounds on neutrino statistics. Journal of Cosmology and Astroparticle Physics, 2018, 2018, 050-050.	5.4	3

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109	Collective flavor transitions of supernova neutrinos. Nuclear Physics, Section B, Proceedings Supplements, 2009, 188, 101-106.	0.4	2
110	High energy neutrinos to see inside the Earth. Nuclear Physics, Section B, Proceedings Supplements, 2009, 190, 150-155.	0.4	2
111	Studies on neutrino Earth radiography. Earth, Planets and Space, 2010, 62, 211-214.	2.5	2
112	Lepton flavour violation in a left-right symmetric model. Journal of High Energy Physics, 1999, 1999, 012-012.	4.7	1
113	A potential test of the CP properties and Majorana nature of neutrinos. Nuclear Physics, Section B, Proceedings Supplements, 2000, 87, 330-332.	0.4	1
114	Neutrino masses and cosmology: current bounds and future sensitivities. Nuclear Physics, Section B, Proceedings Supplements, 2005, 149, 137-139.	0.4	1
115	Mu-tau neutrino refraction and collective three-flavour transformations in supernovae. Journal of Physics: Conference Series, 2008, 136, 042076.	0.4	1
116	Decoherence in supernova neutrino transformations suppressed by deleptonization. Nuclear Physics, Section B, Proceedings Supplements, 2009, 188, 121-123.	0.4	1
117	Light neutrinos in cosmology. Physics of Particles and Nuclei, 2011, 42, 628-640.	0.7	1
118	Nucleosynthesis constraints on heavy $\bar{\nu}_\mu$, in the presence of annihilations to majorons. Nuclear Physics, Section B, Proceedings Supplements, 1996, 48, 266-268.	0.4	0
119	Cosmological measurement of neutrino mass in the presence of leptonic asymmetry. Nuclear Physics, Section B, Proceedings Supplements, 2001, 95, 51-54.	0.4	0
120	Cosmological implications of a relic neutrino asymmetry. Nuclear Physics, Section B, Proceedings Supplements, 2001, 100, 366-368.	0.4	0
121	Neutrino oscillations in dense neutrino media. AIP Conference Proceedings, 2002, , .	0.4	0
122	Neutrino oscillations in dense neutrino media. Nuclear Physics, Section B, Proceedings Supplements, 2003, 118, 503.	0.4	0
123	Neutrino Physics and Cosmology. Les Houches Summer School Proceedings, 2007, , 411-436.	0.2	0
124	Cosmology and neutrino masses. AIP Conference Proceedings, 2007, , .	0.4	0
125	Precision cosmology and neutrinos. Nuclear Physics, Section B, Proceedings Supplements, 2007, 168, 17-22.	0.4	0
126	Decoherence in supernova neutrino transformations suppressed by deleptonization. Journal of Physics: Conference Series, 2008, 136, 042073.	0.4	0

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127	Session I: Probing low energy and mass scales. Nuclear Physics, Section B, Proceedings Supplements, 2009, 188, 371-376.	0.4	0
128	Relic density of neutrinos with primordial asymmetries. Journal of Physics: Conference Series, 2010, 203, 012053.	0.4	0
129	High energy neutrinos to see inside the Earth. Earth, Planets and Space, 2010, 62, 205-209.	2.5	0
130	Simulations of neutrino and muon interaction in matter for geological structures radiography. Earth, Planets and Space, 2010, 62, 187-193.	2.5	0
131	Constraining the cosmic radiation density due to lepton number with BBN. Journal of Physics: Conference Series, 2012, 375, 032004.	0.4	0
132	Neutrino searches at the Pierre Auger Observatory. Nuclear Physics, Section B, Proceedings Supplements, 2013, 235-236, 358-363.	0.4	0
133	Constraining the cosmic radiation density due to lepton number. Nuclear Physics, Section B, Proceedings Supplements, 2013, 237-238, 253-255.	0.4	0
134	Active-sterile neutrino oscillations in the early Universe with the complete mixing matrix. Journal of Physics: Conference Series, 2020, 1468, 012005.	0.4	0
135	Relaxing nucleosynthesis constraints on $\hat{m}_{1/2}$ mass. Surveys in High Energy Physics, 1997, 10, 417-420.	0.6	0