Rafael Alves Batista

List of Publications by Citations

82 papers	2,367 citations	26 h-index	47 g-index
89 ext. papers	3,076 ext. citations	4.2 avg, IF	5.53 L-index

#	Paper	IF	Citations
82	Depth of maximum of air-shower profiles at the Pierre Auger Observatory. I. Measurements at energies above 1017.8 eV. *Physical Review D*, **2014**, 90,	4.9	195
81	Depth of maximum of air-shower profiles at the Pierre Auger Observatory. II. Composition implications. *Physical Review D*, **2014**, 90,	4.9	157
80	CRPropa 3 public astrophysical simulation framework for propagating extraterrestrial ultra-high energy particles. *Journal of Cosmology and Astroparticle Physics*, **2016**, 2016, 038-038	6.4	122
79	SEARCHES FOR ANISOTROPIES IN THE ARRIVAL DIRECTIONS OF THE HIGHEST ENERGY COSMIC RAYS DETECTED BY THE PIERRE AUGER OBSERVATORY. *Astrophysical Journal*, **2015**, 804, 15	4.7	113
78	Improved limit to the diffuse flux of ultrahigh energy neutrinos from the Pierre Auger Observatory. *Physical Review D*, **2015**, 91,	4.9	108
77	Muons in air showers at the Pierre Auger Observatory: Mean number in highly inclined events. *Physical Review D*, **2015**, 91,	4.9	100
76	Science with the Cherenkov Telescope Array **2019**,		97
75	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	72
74	Measurement of the Radiation Energy in the Radio Signal of Extensive Air Showers as a Universal Estimator of Cosmic-Ray Energy. *Physical Review Letters*, **2016**, 116, 241101	7.4	65
73	The Giant Radio Array for Neutrino Detection (GRAND): Science and design. *Science China: Physics, Mechanics and Astronomy*, **2020**, 63, 1	3.6	65
72	Probing the radio emission from air showers with polarization measurements. *Physical Review D*, **2014**, 89,	4.9	63
71	Energy estimation of cosmic rays with the Engineering Radio Array of the Pierre Auger Observatory. *Physical Review D*, **2016**, 93,	4.9	62
70	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. *Astrophysical Journal*, **2014**, 794, 172	4.7	56
69	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	7.9	53
68	Open Questions in Cosmic-Ray Research at Ultrahigh Energies. *Frontiers in Astronomy and Space Sciences*, **2019**, 6,	3.8	49
67	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	7.9	46
66	Muons in air showers at the Pierre Auger Observatory: Measurement of atmospheric production depth. *Physical Review D*, **2014**, 90,	4.9	44

65	LARGE SCALE DISTRIBUTION OF ULTRA HIGH ENERGY COSMIC RAYS DETECTED AT THE PIERRE AUGER OBSERVATORY WITH ZENITH ANGLES UP TO 80 . *Astrophysical Journal*, **2015**, 802, 111	4.7	43
64	Cosmogenic photon and neutrino fluxes in the Auger era. *Journal of Cosmology and Astroparticle Physics*, **2019**, 2019, 002-002	6.4	43
63	LARGE-SCALE DISTRIBUTION OF ARRIVAL DIRECTIONS OF COSMIC RAYS DETECTED ABOVE 10 18 eV AT THE PIERRE AUGER OBSERVATORY. *Astrophysical Journal, Supplement Series*, **2012**, 203, 34	8	39
62	Effects of uncertainties in simulations of extragalactic UHECR propagation, using CRPropa and SimProp. *Journal of Cosmology and Astroparticle Physics*, **2015**, 2015, 063-063	6.4	37
61	Reconstruction of inclined air showers detected with the Pierre Auger Observatory. *Journal of Cosmology and Astroparticle Physics*, **2014**, 2014, 019-019	6.4	36
60	Publisher Note: Muons in air showers at the Pierre Auger Observatory: Mean number in highly inclined events [Phys. Rev. D 91, 032003 (2015)]. *Physical Review D*, **2015**, 91,	4.9	32
59	Prototype muon detectors for the AMIGA component of the Pierre Auger Observatory. *Journal of Instrumentation*, **2016**, 11, P02012-P02012	1	32
58	Bounds on the density of sources of ultra-high energy cosmic rays from the Pierre Auger Observatory. *Journal of Cosmology and Astroparticle Physics*, **2013**, 2013, 009-009	6.4	31
57	Implications of strong intergalactic magnetic fields for ultrahigh-energy cosmic-ray astronomy. *Physical Review D*, **2017**, 96,	4.9	30
56	Features of the Energy Spectrum of Cosmic Rays above 2.5 10^{18} eV Using the Pierre Auger Observatory. *Physical Review Letters*, **2020**, 125, 121106	7.4	26
55	Highlights from the Pierre Auger Observatory. *Brazilian Journal of Physics*, **2014**, 44, 560-570	1.2	25
54	Ultrahigh Energy Neutrinos at the Pierre Auger Observatory. *Advances in High Energy Physics*, **2013**, 2013, 1-18	1	25
53	The Resilience of Life to Astrophysical Events. *Scientific Reports*, **2017**, 7, 5419	4.9	24
52	Diffusion of cosmic rays at EeV energies in inhomogeneous extragalactic magnetic fields. *Journal of Cosmology and Astroparticle Physics*, **2014**, 2014, 031-031	6.4	24
51	Monte Carlo studies for the optimisation of the Cherenkov Telescope Array layout. *Astroparticle Physics*, **2019**, 111, 35-53	2.4	23
50	A SEARCH FOR POINT SOURCES OF EeV PHOTONS. *Astrophysical Journal*, **2014**, 789, 160	4.7	23
49	Determining the fraction of cosmic-ray protons at ultrahigh energies with cosmogenic neutrinos. *Physical Review D*, **2019**, 100,	4.9	22
48	The rapid atmospheric monitoring system of the Pierre Auger Observatory. *Journal of Instrumentation*, **2012**, 7, P09001-P09001	1	22

47	Measurement of the cosmic-ray energy spectrum above 2.5⁢1018 eV using the Pierre Auger Observatory. *Physical Review D*, **2020**, 102,	4.9	22
46	Search for correlations between the arrival directions of IceCube neutrino events and ultrahigh-energy cosmic rays detected by the Pierre Auger Observatory and the Telescope Array. *Journal of Cosmology and Astroparticle Physics*, **2016**, 2016, 037-037	6.4	21
45	A SEARCH FOR POINT SOURCES OF EeV NEUTRONS. *Astrophysical Journal*, **2012**, 760, 148	4.7	21
44	Techniques for measuring aerosol attenuation using the Central Laser Facility at the Pierre Auger Observatory. *Journal of Instrumentation*, **2013**, 8, P04009-P04009	1	20
43	Results of a self-triggered prototype system for radio-detection of extensive air showers at the Pierre Auger Observatory. *Journal of Instrumentation*, **2012**, 7, P11023-P11023	1	19
42	Probing intergalactic magnetic fields with simulations of electromagnetic cascades. *Physical Review D*, **2016**, 94,	4.9	18
41	Nanosecond-level time synchronization of autonomous radio detector stations for extensive air showers. *Journal of Instrumentation*, **2016**, 11, P01018-P01018	1	15
40	Measurement of the cosmic ray spectrum above 4 ⁢1018eV using inclined events detected with the Pierre Auger Observatory. *Journal of Cosmology and Astroparticle Physics*, **2015**, 2015, 049-049	6.4	15
39	The Impact of Plasma Instabilities on the Spectra of TeV Blazars. *Monthly Notices of the Royal Astronomical Society*, **2019**,	4.3	14
38	Ultrahigh-energy cosmic rays from tidally-ignited white dwarfs. *Physical Review D*, **2017**, 96,	4.9	14
37	Sensitivity of the Cherenkov Telescope Array for probing cosmology and fundamental physics with gamma-ray propagation. *Journal of Cosmology and Astroparticle Physics*, **2021**, 2021, 048-048	6.4	14
36	Azimuthal asymmetry in the risetime of the surface detector signals of the Pierre Auger Observatory. *Physical Review D*, **2016**, 93,	4.9	12
35	A TARGETED SEARCH FOR POINT SOURCES OF EeV NEUTRONS. *Astrophysical Journal Letters*, **2014**, 789, L34	7.9	11
34	Interpretation of the depths of maximum of extensive air showers measured by the Pierre Auger Observatory. *Journal of Cosmology and Astroparticle Physics*, **2013**, 2013, 026-026	6.4	11
33	The Gamma-ray Window to Intergalactic Magnetism. *Universe*, **2021**, 7, 223	2.5	11
32	Publisher Note: Muons in air showers at the Pierre Auger Observatory: Measurement of atmospheric production depth [Phys. Rev. D 90, 012012 (2014)]. *Physical Review D*, **2014**, 90,	4.9	10
31	Quantum gravity phenomenology at the dawn of the multi-messenger era A review. *Progress in Particle and Nuclear Physics*, **2022**, 103948	10.6	10
30	Search for patterns by combining cosmic-ray energy and arrival directions at the Pierre Auger Observatory. *European Physical Journal C*, **2015**, 75, 269	4.2	9

29	Secondary neutrino and gamma-ray fluxes from SimProp and CRPropa. *Journal of Cosmology and Astroparticle Physics*, **2019**, 2019, 006-006	6.4	9
28	Very-high-energy Emission from Magnetic Reconnection in the Radiative-inefficient Accretion Flow of SgrA*. *Astrophysical Journal*, **2019**, 879, 6	4.7	8
27	Multimessenger Constraints on Intergalactic Magnetic Fields from the Flare of TXS 0506+056. *Astrophysical Journal Letters*, **2020**, 902, L11	7.9	7
26	Search for magnetically-induced signatures in the arrival directions of ultra-high-energy cosmic rays measured at the Pierre Auger Observatory. *Journal of Cosmology and Astroparticle Physics*, **2020**, 2020, 017-017	6.4	6
25	Origin of atmospheric aerosols at the Pierre Auger Observatory using studies of air mass trajectories in South America. *Atmospheric Research*, **2014**, 149, 120-135	5.4	6
24	Identifying clouds over the Pierre Auger Observatory using infrared satellite data. *Astroparticle Physics*, **2013**, 50-52, 92-101	2.4	6
23	Measurement of the Fluctuations in the Number of Muons in Extensive Air Showers with the Pierre Auger Observatory. *Physical Review Letters*, **2021**, 126, 152002	7.4	6
22	Using spherical wavelets to search for magnetically-induced alignment in the arrival directions of ultra-high energy cosmic rays. *Astroparticle Physics*, **2014**, 54, 54-60	2.4	5
21	The energy spectrum of cosmic rays beyond the turn-down around (varvec{10^{17}}) eV as measured with the surface detector of the Pierre Auger Observatory. *European Physical Journal C*, **2021**, 81, 1	4.2	5
20	CRPropa: A public framework to propagate UHECRs in the universe. *EPJ Web of Conferences*, **2015**, 99, 13004	0.3	4
19	DETECTION OF POINT SOURCES IN COSMIC RAY MAPS USING THE MEXICAN HAT WAVELET FAMILY. *International Journal of Modern Physics E*, **2011**, 20, 61-66	0.7	4
18	The Giant Radio Array for Neutrino Detection (GRAND): Present and Perspectives **2017**,		4
17	Cosmic ray propagation with CRPropa 3. *Journal of Physics: Conference Series*, **2015**, 608, 012076	0.3	3
16	Deep-learning based reconstruction of the shower maximum X max using the water-Cherenkov detectors of the Pierre Auger Observatory. *Journal of Instrumentation*, **2021**, 16, P07019	1	3
15	On the measurement of the helicity of intergalactic magnetic fields using ultra-high-energy cosmic rays. *Journal of Cosmology and Astroparticle Physics*, **2019**, 2019, 011-011	6.4	2
14	Propagation of UHECRs in the universe. *Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, **2014**, 742, 245-249	1.2	2
13	Cosmogenic gamma-rays and neutrinos constrain UHECR source models **2017**,		2
12	Studying cosmological □ray propagation with the Cherenkov Telescope Array **2017**,		2

11	A Search for Ultra-high-energy Neutrinos from TXS 0506+056 Using the Pierre Auger Observatory. *Astrophysical Journal*, **2020**, 902, 105	4.7	2
10	The intrinsic gamma-ray spectrum of TXS 0506+056: intergalactic propagation effects. *Monthly Notices of the Royal Astronomical Society*, **2020**, 500, 2188-2195	4.3	2
9	Studies on the response of a water-Cherenkov detector of the Pierre Auger Observatory to atmospheric muons using an RPC hodoscope. *Journal of Instrumentation*, **2020**, 15, P09002-P09002	1	2
8	High-energy neutrino production in clusters of galaxies. *Monthly Notices of the Royal Astronomical Society*, **2021**, 507, 1762-1774	4.3	2
7	Testing effects of Lorentz invariance violation in the propagation of astroparticles with the Pierre Auger Observatory. *Journal of Cosmology and Astroparticle Physics*, **2022**, 2022, 023	6.4	1
6	Cosmic Inflation: Trick or Treat? **2020**, 111-173		1
5	Extraction of the muon signals recorded with the surface detector of the Pierre Auger Observatory using recurrent neural networks. *Journal of Instrumentation*, **2021**, 16, P07016	1	1
4	CRPropa - A Toolbox for Cosmic Ray Simulations. *Journal of Physics: Conference Series*, **2019**, 1181, 012034	0.3	0
3	Search for ultra-high energy neutrinos with the Pierre Auger Observatory. *Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, **2013**, 725, 80-84	1.2	
2	Propagation of cosmic rays and their secondaries in the intracluster medium. *Proceedings of the International Astronomical Union*, **2020**, 15, 178-179	0.1	
1	Neutrino and ray Emission from the Core of NGC1275 by Magnetic Reconnection: GRMHD Simulations and Radiative Transfer/Particle Calculations. *Proceedings of the International Astronomical Union*, **2018**, 14, 184-188	0.1	