Hernán Asorey

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&
ITeDA – Gerencia de Tecnologías e Investigación en Altas Energías

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Current Positions

2021-current Researcher (CNEA TNG 312 - Principal B) at the Medical Physics Department, Gerencia de Física (GF), and at Instituto de Tecnologías en Detección y Astropartículas (ITeDA), Gerencia de Área de Investigaciones y Aplicaciones No Nucleares (GAIYANN), Comisión Nacional de Energía Atómica (CNEA).

2018-current Associated Professor of the Física III B (Thermodynamics) and Física IV B (Introduction to Particle Physics, Astrophysics and Cosmology) courses of the Profesorado de Nivel Medio y Superior en Física of the Universidad Nacional de Río Negro (UNRN).

Education

2012 Doctor in Physics (Ph.D.)
Institution: Particles and Fields Group, Centro Atómico Bariloche - Instituto Balseiro, CNEA-UNC. *Thesis*: The Water Cherenkov Detectors of the Pierre Auger Observatory and their Application to
2005 the Study of Background Radiation. *Advisor*: Dr. Ingomar Allekotte. Master in Science, Physics *Orientation*: High Energy Physics. *Institution*: Particles and Fields Group, Instituto Balseiro, Centro Atómico Bariloche (CNEA-UNC). *Thesis*: Event Reconstruction with the Surface Detectors of the Pierre Auger Observatory. *Advisor*: Dr. Ingomar Allekotte

2004 "Licenciado" in Physics
Institution: Instituto Balseiro, Centro Atómico Bariloche (CNEA-UNC)

Research & Teaching Activities

Since I have earned my master degree in December 2005, I have been involved in the following projects:

Medical Physics Department, CAB,(2016-Present)

Project manager of the PlomBOX project, an open device to measure lead in water

Astroparticle detection applications (I): development of simulations and detectors for the calculation and measurement of spatial dose distribution in clinical and high-level dose environments.

Development of new artificial-intelligence-based big data analysis, big data curation and big data anonymization.

Head of the Medical Physics Department (GF-GAIYANN-CNEA). Elected by the members of the Department (2017-2021).

ITeDA, CAC,(2018-Present)

Astroparticle detection applications (II): muography of big artificial and geological buildings: applications to volcanic risk assesment, mining prospecting and dams densitometry

Astroparticle simulations applications: application in muography, space weather and new radiation detectors and shielding designs.

Latin American Giant Observatory (LAGO) (2007-Present)

See lagoproject.net

Responsible of the LAGO Thematic Service at the Horizon 2020 EOSC-Synergy project.

Principal Investigator, 2013-2016

Design and execution of the project new organization

Design and coordination of the LAGO Space Weather program

Simulations and data analysis for the detection of transient events (GRB and Forbush events), background radiation and atmospheric physics.

Research, development and building of water-Cherenkov detectors for the LAGO project at Universidad Industrial de Santander and Centro Atómico Bariloche. One of them is currently installed and is operating at the Antarctic Peninsula.

Design and coordination of the experiment "Measurement of Muon Lifetime in Water", done by undergraduate students at Instituto Balseiro.

ANDES Underground Laboratory (2010-2013, 2015-2016, 2018-present)

See www.andeslab.org

Estimation and measurements of the expected backgrounds at the ANDES underground lab due to natural radioactivity and high energy atmospheric muons.

Laboratory design.

Muon veto for the ANDES experiments design

Teaching (2009-Present)

2015-present Associated Professor, Thermodynamics, Cosmology and Astrophysics, Modern Physics A and Wave Physics, Profesorado de Nivel Medio y Superior en Física, Sede Andina, Universidad Nacional de Río Negro (UNRN)

2012-2020 Lecturer of the "La Física del Proyecto LAGO", "Medición de la Vida Media del Muón" y "Simulaciones de Astropartículas" physics courses for graduate and posgraduate physics students. These courses were dictated during the annual meetings of the LAGO collaboration, and are still being dictated by some of my former students at LAGO.

2017-2021 Associated Professor, Astroparticle physics, Particle detection techniques, Double Doctorate in Astrophysics program, Universidad Nacional de San Martín (UNSAM)

2016-2020 Member of the Academic Committee of the Master in Medical Physics program of the Instituto Balseiro, Universidad Nacional de Cuyo (UNC).

2015-2017 Senior Teaching assistant (Jefe de Trabajos Prácticos), "Introduction to nuclear, particle physics and dosimetry" and "Cosmic Rays Physics" (lecturer) courses, Instituto Balseiro, Universidad Nacional de Cuyo (UNC)

2014-2015 Professor, Classical Mechanics (Graduate) and General Astronomy, School of Physics, UIS.

2013-2014 Professor, Introductory Physics course and Introductory Particle Physics course, UIS.

2014 Design and lecture of the course "Astro-meteorology and Climate Change", intended for High Schools teachers, UIS, March 2014.

2013 Professor, Advanced Mathematical Methods for Physics course, UIS.

2009-2012 Senior teaching assistant (Jefe de Trabajos Prácticos), Physics I A & B (introductory physics) course, UNRN.

2010-2012 Teaching assistant, Experimental Physics III and Introduction to nuclear and particle physics courses, Instituto Balseiro, Universidad Nacional de Cuyo (UNC)

Books, chapters and patents

2020 3. H. Asorey, C. Graziosi, A. López Dávalos, Física IA. De las galaxias a los quarks, Colección Lecturas de Cátedra, Editorial UNRN, 334 pg, Viedma, Argentina, ISBN 978-987-4960-29-0, 2020

2020 2. H. Asorey, I. Sidelnik, J.J. Blostein, M. Gómez Berisso, J. Lipovetzky, M. Sofo Haro; M. Pérez; L.H. Arnaldi; F. Alcalde, PCT/IB2020/050869: "Usage of Water Cherenkov Detectors for the detection of Neutrons and Gamma Radiation"

2019 1. H. Asorey, I. Sidelnik, J.J. Blostein, M. Gómez Berisso, J. Lipovetzky, M. Sofo Haro; M. Pérez; L.H. Arnaldi; F. Alcalde, AR20190100279: "DETECTOR DE NEUTRONES Y RADIACIÓN GAMMA MEDIANTE EL EMPLEO DE UN DETECTOR CHERENKOV EN AGUA"

Human Resources Training Summary

Up to now, I am training or I have successfully trained a total of **17** students and fellows, **2** Post Doctoral researchers, **4** PhD students, **4** MSc students and **7** undergraduated students in Argentina, Venezuela and Colombia.

Publication summary

127 peer review journal publications.

87 participations and presentations at Schools & Conferences.

25 technical reports of Comisión Nacional de Energía Atómica and internal technical notes of the Pierre Auger Observatory.

See the complete list of publications, works and scitations in some of the following services:

ORCID : orcid.org/0000-0002-4559-8785

Google Scholar : scholar.google.com.co/citations?user=Vj7_fGsAAAAJ

Scopus : www.scopus.com/authid/detail.url?authorId=35276880300

Inspire-HEP : inspirehep.net/author/profile/H.Asorey.1

Dr. Hernán Asorey, 25th April 2022

Appendix: Complete list of publications

Complete list of Journal papers

2022 127. C. Sarmiento-Cano, M. Suárez-Durán, R. Calderón-Ardila, A. Vásquez-Ramírez, A. Jaimes-Motta, S. Dasso, I. Sidelnik, L. A. Núñez, H. Asorey, for the LAGO Collaboration, The ARTI Framework: Cosmic Rays Atmospheric Background Simulations Eur. J. Phys C submitted (2022) arXiv:2010.14591[astro-ph.IM]

2022 126. R. Calderon-Ardila, H. Asorey, A. Almela, A. Sedoski, C. Varela, N. Leal and M. Gomez-Berisso Development of Mudulus, a Muography detector based on double-synchronized electronics for Geophysical applications, J. Adv. Inst. Sci. submitted , (2022)

2022 125. A Taboada, C Sarmiento-Cano, A Sedoski, H AsoreyMeiga, a Dedicated Framework Used for Muography Applications, J. Adv. Inst. Sci. **2022** 01 (2022)

2022 124. J. Peña-Rodríguez, P. A. Salgado-Meza, H. Asorey, L. A. Núñez, A. Núñez-Castiñeyra, C. Sarmiento-Cano, M. Suárez-Durán RACIMO@Bucaramanga: A Citizen Science Project on Data Science and Climate Awareness, JINST submitted , (2022). arXiv:2203.05431[astro-ph.IM]

2022 123. J. Peña-Rodríguez, A. Vesga-Ramírez, A. Vásquez-Ramírez, M. Suárez-Durán, R. de León-Barrios, D. Sierra-Porta, R. Calderón-Ardila, J. Pisco-Guavabe, H. Asorey, J. D. Sanabria-Gómez, L. A. Núñez Muography in Colombia: simulation framework, instrumentation and data analysis, J. Adv. Inst. Sci. in press , (2022). arXiv:2201.11160[astro-ph.IM]

2022 122. The Pierre Auger Collaboration, Testing effects of Lorentz invariance violation in the propagation of astroparticles with the Pierre Auger Observatory JCAP **01** (2022) 023 arXiv:2112.06773[astro-ph.HE]

2021 121. The Pierre Auger Collaboration, The energy spectrum of cosmic rays beyond the turn-down around 10^{17} eV as measured with the surface detector of the Pierre Auger Observatory Eur. Phys. J. **C81** 966 (2021)

2021 120. A Vesga-Ramírez, JD Sanabria-Gómez, D Sierra-Porta, L Arana-Salinas, H Asorey, VA Kudryavtsev, R Calderón-Ardila, LA Núñez, Simulated Annealing for Volcano Muography, Journal of South American Earth Sciences **109** 103248 (2021) arXiv:2005.08295[physics.geo-ph]

2021 119. J. Sánchez-Villafrades, J. Peña-Rodríguez, H. Asorey, L. A. Núñez, Characterization and on-field performance of the MuTe Silicon Photomultipliers JINST submitted (2021) arXiv:2102.01119[physics.ins-det]

2021 118. The Pierre Auger Collaboration, Design and implementation of the AMIGA embedded system for data acquisition JINST **16** T07008 (2021) arXiv:2101.11747[astro-ph.IM]

2021 117. The Pierre Auger Collaboration, Deep-learning based reconstruction of the shower maximum Xmax using the water-Cherenkov detectors of the Pierre Auger Observatory JINST **16** P07019 (2021) arXiv:2101.02946[astro-ph.IM]

2021 116. The Pierre Auger Collaboration, Extraction of the muon signals recorded with the surface detector of the Pierre Auger Observatory using recurrent neural networks JINST **16** P07016 (2021) arXiv:2103.11983[hep-ex]

2021 115. The Pierre Auger Collaboration, The FRAM robotic telescope for atmospheric monitoring at the Pierre Auger Observatory JINST **16** P06027 (2021) arXiv:2101.11602[astro-ph.IM]

2021 114. The Pierre Auger Collaboration, Measurement of the Fluctuations in the Number of Muons in Extensive Air Showers with the Pierre Auger Observatory Phys. Rev. Lett. **126** 152002 (2021) arXiv:2102.07797[hep-ex]

2021 113. The Pierre Auger Collaboration, Calibration of the underground muon detector of the Pierre Auger Observatory JINST **16** P04003 (2021) arXiv:2012.08016[astro-ph.IM]

2021 112. The Pierre Auger Collaboration, Design, upgrade and characterization of the silicon photomultiplier front-end for the AMIGA detector at the Pierre Auger Observatory JINST **16** P01026 (2021) arXiv:2011.06633[astro-ph.IM]

2020 111. The Pierre Auger Collaboration, Reconstruction of Events Recorded with the Surface Detector of the Pierre Auger Observatory JINST **15** P10021 (2020) arXiv:2007.04139[astro-ph.IM]

2020 110. The Pierre Auger Collaboration, A Search for Ultra-high-energy Neutrinos from TXS 0506+056 Using the Pierre Auger Observatory ApJ **902** 105 (2020) arXiv:2010.10953[astro-ph.HE]

2020 109. The Pierre Auger Collaboration, Features of the cosmic-ray energy spectrum above 2.5×10^{18} eV using the Pierre Auger Observatory Phys. Rev. Lett. **125** 121106 (2020) arXiv:2008.06488[astro-ph.HE]

2020 108. The Pierre Auger Collaboration, Measurement of the cosmic-ray energy spectrum above 2.5×10^{18} eV using the Pierre Auger Observatory Phys. Rev. **D 102** 062005 (2020) arXiv:2008.06486[astro-ph.HE]

2020 107. The Pierre Auger Collaboration, The Pierre Auger Observatory and its Upgrade Sci. Rev. End World **1** (4) 31 (2020)

2020 106. The Pierre Auger Collaboration, Studies on the response of a water-Cherenkov detector of the Pierre Auger Observatory to atmospheric muons using an RPC hodoscope JINST **15** P09002 (2020) arXiv:2007.04139[astro-ph.IM]

2020 105. The Pierre Auger Collaboration, Direct measurement of the muonic content of extensive air showers between 2×10^{17} and 2×10^{18} eV at the Pierre Auger Observatory Eur. Phys. J. **C80** 751 (2020)

2020 104. The Pierre Auger Collaboration, Search for magnetically-induced signatures in the arrival directions of ultra-high-energy cosmic rays measured at the Pierre Auger Observatory JCAP **2020** (06) 017 (2020) arXiv:2004.10591[astro-ph.HE]

2020 103. J Peña-Rodríguez, J Pisco-Guabave, D Sierra-Porta, M Suárez-Durán, M Arenas-Flórez, LM Pérez-Archila, JD Sanabria-Gómez, LA Núñez & H Asorey, Design and construction of MuTe: a hybrid Muon Telescope to study Colombian Volcanoes, JINST **15** P09006 (2020) arXiv:2004.09364[physics.ins-det]

2020 102. The Pierre Auger Collaboration, A 3-Year Sample of Almost 1,600 Elves Recorded Above South America by the Pierre Auger Cosmic-Ray Observatory, Earth and Space Science **7**(4) e2019EA000582 (2020)

2020 101. The Pierre Auger Collaboration, Cosmic-Ray Anisotropies in Right Ascension Measured by the Pierre Auger Observatory , ApJ **891**(2) 142 (2020) arXiv:2002.06172[astro-ph.HE]

2020 100. Iván Sidelnik, Hernán Asorey, Nicolás Guarin, Mauricio Suaréz Durán, José Lipovetzky, Luis Horacio Arnaldi, Martín Pérez, Miguel Sofo Haro, Mariano Gómez Berisso, Fabricio Alcalde Bessia & Juan Jerónimo Blostein, Enhancing neutron detection capabilities of a water Cherenkov detector, NIM **A955** 163172 (2020)

2020 99. Iván Sidelnik, Hernán Asorey, Nicolás Guarin, Mauricio Suaréz Durán, Mariano Gómez Berisso, José Lipovetzky & Juan Jerónimo Blostein, Simulation of 500 MeV neutrons by using NaCl doped Water Cherenkov detector, Adv. Space Res. **65**(9) 2216-2222 (2020)

2020 98. Iván Sidelnik, Hernán Asorey, Nicolás Guarin, Mauricio Suaréz Durán, Fabricio Alcalde Bessia, Luis Horacio Arnaldi, Mariano Gómez Berisso, José Lipovetzky, Martín Pérez, Miguel Sofo Haro & Juan Jerónimo Blostein, Neutron detection capabilities of Water Cherenkov Detectors, NIM **A952** 161962 (2020)

2020 97. A Vásquez-Ramírez, M Suárez-Durán, A Jaimes-Motta, R Calderón-Ardila, J Peña-Rodríguez, J Sánchez-Villafrades, JD Sanabria-Gómez, L. A. Núñez & H Asorey, Simulated Response of MuTe, a Hybrid Muon Telescope, JINST **15** O8004 (2020) arXiv:1912.10081[physics.ins-det]

2019 96. The Pierre Auger Collaboration, Limits on point-like sources of ultra-high-energy neutrinos with the Pierre Auger Observatory, JCAP **2019**(11) 004 (2019) arXiv:1906.07419[astro-ph.HE]

2019 95. The Pierre Auger Collaboration, Data-driven estimation of the invisible energy of cosmic ray showers with the Pierre Auger Observatory, PRD **100**082003 (2019) arXiv:1901.08040[astro-ph.IM]

2019 94. The Pierre Auger Collaboration, Probing the origin of ultra-high-energy cosmic rays with neutrinos in the EeV energy range using the Pierre Auger Observatory, JCAP **2019**(10) 022 (2019) arXiv:1906.07422[astro-ph.HE]

2019 93. The Pierre Auger Collaboration, Measurement of the average shape of longitudinal profiles of cosmic-ray air showers at the Pierre Auger Observatory, JCAP **2019**(03) 018 (2019) arXiv:1811.04660[astro-ph.HE]

2018 92. H Asorey, R Calderón-Ardila, K Forero-Gutiérrez, et al., miniMuTe: A muon telescope prototype for studying volcanic structures with cosmic ray flux, Scientia et technica **23**(3) 386-391 (2018) arXiv:1811.04660[astro-ph.HE]

2018 91. H. Asorey, R. Calderón-Ardila, C. R. Carvajal-Bohorquez, et al Astroparticle projects at the Eastern Colombia region: facilities and instrumentation, Scientia et technica **23**(3) 392–397 (2018)

2018 90. The Pierre Auger Collaboration, Large-scale cosmic-ray anisotropies above 4 EeV measured by the Pierre Auger Observatory, APJ **868**(1) 4 (2018) arXiv:1808.03579[astro-ph.IM]

2018 89. The Pierre Auger Collaboration, Observation of inclined EeV air showers with the radio detector of the Pierre Auger Observatoryi, JCAP **2018**(10) 026 (2018) arXiv:1806.05386[astro-ph.IM]

2018 88. H. Asorey, L. A. Nunez & C. Sarmiento-Cano, Early Exposure of Digital Natives to Environments, Methodologies and Research Techniques in University Physics Rev. Bras. Ensino Fís **40**(4) e5407 (2018) arXiv:1501.04916[physics.ed-ph]

2018 87. H. Asorey, L. A. Núñez, M. Suarez-Duran Preliminary Results from The Latin American Giant Observatory Space Weather Simulation Chain Space Weather **16**(5) 461–475 (2018) arXiv:1802.08867[physics.geo-ph]

2018 86. The Pierre Auger Collaboration, An Indication of Anisotropy in Arrival Directions of Ultra-high-energy Cosmic Rays through Comparison to the Flux Pattern of Extragalactic Gamma-Ray Sources, ApJ **L853**(2) L29 (2018) arXiv:1801.06160[astro-ph.CO]

2017 85. The Pierre Auger Collaboration, 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, Phys. Rev. D **96** 122003 (2017) arXiv:1710.07249[astro-ph.HE]

2017 84. The Pierre Auger Collaboration, Observation of a large-scale anisotropy in the arrival directions of cosmic rays above 8×10^{18} eV, Science **357**(6357) 1266–1270 (2017) arXiv:1709.07321[astro-ph.HE]

2017 83. The Pierre Auger Collaboration, Calibration of the Logarithmic-Periodic Dipole Antenna (LPDA) Radio Stations at the Pierre Auger Observatory using an Octocopter, JINST **12** T10005 (2017) arXiv:1702.01392[astro-ph.IM]

2017 82. The Pierre Auger Collaboration, Spectral calibration of the fluorescence telescopes of the Pierre Auger Observatory, Astropart Phys **95** 44–56 (2017) arXiv:1709.01537[astro-ph.IM]

2017 81. The Pierre Auger Collaboration, Combined fit of spectrum and composition data as measured by the Pierre Auger Observatory, JCAP**04** 038 (2017) arXiv:1612.07155[astro-ph.HE]

2017 80. The Pierre Auger Collaboration, Search for photons with energies above 10^{18} eV using the hybrid detector of the Pierre Auger Observatory JCAP **04** 009 (2017) arXiv:1612.01517[astro-ph.HE]

2017 79. The Pierre Auger Collaboration, Muon counting using silicon photomultipliers in the AMIGA detector of the Pierre Auger observatory JINST **12** P03002 (2017) arXiv:1703.06193[astro-ph.IM]

2017 78. I. Sidelnik *&* H. Asorey, LAGO: the Latin American Giant Observatory, NIM-A **876** 173–175 (2017) arXiv:1703.05337[astro-ph.IM]

2017 77. I. Sidelnik, H. Asorey, J. J. Blostein *&* M. Gómez Berisso, Neutron Detection Using a Water Cherenkov Detector with Pure Water and a Single PMT, NIM-A **876** 153–155 (2017)

2017 76. The Pierre Auger Collaboration, Impact of atmospheric effects on the energy reconstruction of air showers observed by the surface detectors of the Pierre Auger Observatory JINST **12** P02006 (2017) arXiv:1702.02835[astro-ph.IM]

2017 75. The Pierre Auger Collaboration, Ultrahigh-energy neutrino follow-up of gravitational wave events GW150914 and GW151226 with the Pierre Auger Observatory Phys. Rev. **D94** 122007 (2016) arXiv:1608.07378[astro-ph.HE]

2017 74. The Pierre Auger Collaboration, Multi-resolution anisotropy studies of ultrahigh-energy cosmic rays detected at the Pierre Auger Observatory JCAP **06** 026 (2017) arXiv:1611.06812[astro-ph.HE]

2016 73. The Pierre Auger Collaboration, Evidence for a mixed mass composition at the 'ankle' in the cosmic-ray spectrum Phys. Lett. **B762** 288–295 (2016) arXiv:1609.08567[astro-ph.HE]

2016 72. The Pierre Auger Collaboration, Testing Hadronic Interactions at Ultrahigh Energies with Air Showers Measured by the Pierre Auger Observatory Phys. Rev. Lett. **117** 192001 (2016) arXiv:1610.08509[hep-ex]

2016 71. The Pierre Auger Collaboration, Search for ultrarelativistic magnetic monopoles with the Pierre Auger observatory Phys. Rev. **D94** 082002 (2016) arXiv:1609.04451[astro-ph.HE]

2016 70. The Pierre Auger Collaboration, Energy estimation of cosmic rays with the Engineering Radio Array of the Pierre Auger Observatory Phys. Rev. **D93** 122005 (2016) arXiv:1508.04267[astro-ph.HE]

2016 69. The Pierre Auger Collaboration, The Pierre Auger Observatory Upgrade-Preliminary Design Report, arXiv:1604.03637[astro-ph.IM]

2016 68. The Pierre Auger Collaboration, Azimuthal asymmetry in the risetime of the surface detector signals of the Pierre Auger Observatory Phys. Rev. **D93**, 072006 (2016) arXiv:1604.00978[astro-ph.HE]

2016 67. The Pierre Auger Collaboration, Prototype muon detectors for the AMIGA component of the Pierre Auger Observatory JINST **11** P02012 (2016) arXiv:1605.01625[physics.ins-det]

2016 66. The Pierre Auger Collaboration, Nanosecond-level time synchronization of autonomous radio detector stations for extensive air showers JINST **11** P01018 (2016) arXiv:1512.02216[physics.ins-det]

2016 65. The Pierre Auger Collaboration, Measurement of the Radiation Energy in the Radio Signal of Extensive Air Showers as a Universal Estimator of Cosmic-Ray Energy Phys. Rev. Lett. **116**, 241101 (2016) arXiv:1605.02564[astro-ph.HE]

2016 64. The Pierre Auger Collaboration, Energy Estimation of Cosmic Rays with the Engineering Radio Array of the Pierre Auger Observatory Phys. Rev. **D93**, 122005 (2016) arXiv:1508.04267[astro-ph.HE]

2016 63. The Pierre Auger Collaboration, 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 JCAP **01** 037 (2016) arXiv:1511.09408[astro-ph.HE]

2015 62. The Pierre Auger Collaboration, Measurement of the cosmic ray spectrum above 4×10^{18} eV using inclined events detected with the Pierre Auger Observatory JCAP **08** 049 (2015) arXiv:1503.07786[astro-ph.HE]

2015 61. The Pierre Auger Collaboration, The Pierre Auger Cosmic Ray Observatory NIM **A 798** 172–213 (2015) arXiv:1502.01323[astro-ph.HE]

2015 60. The Pierre Auger Collaboration, Improved limit to the diffuse flux of ultrahigh energy neutrinos from the Pierre Auger Observatory Phys. Rev. **D91**, 092008 (2015) arXiv:1504.05397[astro-ph.HE]

2015 59. The Pierre Auger Collaboration, Large scale distribution of ultra high energy cosmic rays detected at the Pierre Auger Observatory with zenith angles up to 80 degrees ApJ **802**, 111 (2015) arXiv:1411.6953[astro-ph.HE]

2015 58. The Pierre Auger Collaboration, Searches for Anisotropies in the Arrival Directions of the Highest Energy Cosmic Rays Detected by the Pierre Auger Observatory, ApJ **804**, 15 (2015) arXiv:1411.6111[astro-ph.HE]

2015 57. The Pierre Auger Collaboration, Search for patterns by combining cosmic-ray energy and arrival directions at the Pierre Auger Observatory Eur. Phys. J., **C75** 269 (2015) arXiv:1410.0515[astro-ph.HE]

2015 56. The Pierre Auger Collaboration, Muons in air showers at the Pierre Auger Observatory: Mean number in highly inclined events Phys. Rev. **D91** 3, 032003 (2015) arXiv:1408.1421[astro-ph.HE], Errata: Phys. Refv. **D91** 059901 (2015)

2014 55. The Pierre Auger Collaboration, Depth of maximum of air-shower profiles at the Pierre Auger Observatory: II. Composition implications Phys. Rev. **D90** 12, 122006 (2014) arXiv:1409.5083[astro-ph.HE]

2014 54. The Pierre Auger Collaboration, Depth of maximum of air-shower profiles at the Pierre Auger Observatory: I. Measurements at energies above $10^{17.8}$ eV Phys. Rev. **D90** 12, 122005 (2014) arXiv:1409.4809[astro-ph.HE]

2014 53. H. Asorey, J.I. Castro & A. López Dávalos, Una deducción analítica simple de la hodógrafa para el problema de Kepler, Rev. Ens. Fís. **26**(1), 63-73 (2014).

2014 52. The Pierre Auger Collaboration, Searches for Large-scale Anisotropy in the Arrival Directions of Cosmic Rays Detected above Energy of 1019 eV at the Pierre Auger Observatory and the Telescope Array ApJ **794**(2), 172 (2014) arXiv:1409.3128[astro-ph.HE]

2014 51. The Pierre Auger Collaboration, Muons in air showers at the Pierre Auger Observatory: Measurement of atmospheric production depth Phys. Rev. D **90**(1), 012012 (2014) arXiv:1407.5919[astro-ph.HE]

2014 50. The Pierre Auger Collaboration, Reconstruction of inclined air showers detected with the Pierre Auger Observatory, J. of Cosmo. Astrop. JCAP **08** 019 (2014) arXiv:1407.3214[astro-ph.HE]

2014 49. The Pierre Auger Collaboration, A Targeted Search for Point Sources of EeV Neutrons, Astrophys. J. Letters **789**(2), L34 (2014)

2014 48. The Pierre Auger Collaboration, A search for point sources of EeV photons, Astrophys. J, **789**(2), 160 (2014)

2014 47. The Pierre Auger Collaboration, Origin of atmospheric aerosols at the Pierre Auger Observatory using studies of air mass trajectories in South America, Atmospheric Research **149**, 120-135 (2014)

2014 46. The Pierre Auger Collaboration, Probing the radio emission from air showers with polarization measurements, Phys. Rev. **D89** 052002 (2014)

2013 45. The Pierre Auger Collaboration, Identifying clouds over the Pierre Auger Observatory using infrared satellite data, Astrop. Phys **50** 92–101 (2013)

2013 44. The Pierre Auger Collaboration, Bounds on the density of sources of ultra-high energy cosmic rays from the Pierre Auger Observatory, JCAP, **13** (05) 009–034 (2013), arXiv:1305.1576v1[astro-ph.HE]

2013 43. The Pierre Auger Collaboration, Techniques for Measuring Aerosol Attenuation using the Central Laser Facility at the Pierre Auger Observatory, JINST, **8** (04) P04009 (2013), arXiv:1303.5576v1[astro-ph.IM]

2013 42. The CTA Consortium, Introducing the CTA concept, Astropart. Phys., **43** (03) 3–18 (2013)

2013 41. The Pierre Auger Collaboration, Ultra-High Energy Neutrinos at the Pierre Auger Observatory, AHEP, 2013:708680, 18 pp (2013)

2013 40. The Pierre Auger Collaboration, Interpretation of the depths of maximum of extensive air showers measured by the Pierre Auger Observatory, JCAP, **13** (02) 026–041 (2013), arXiv:1301.6637v2[astro-ph.HE]

2013 39. The Pierre Auger Collaboration, Constraints on the origin of cosmic rays above 10^{18} eV from large scale anisotropy searches in data of the Pierre Auger Observatory, ApJL, **762** (1) L13 (2013), arXiv:1212.3083v1[astro-ph.HE]

2012 38. The Pierre Auger Collaboration, Large scale distribution of arrival directions of cosmic rays detected above 10^{18} eV at the Pierre Auger Observatory, ApJS **203** (2) 34 (2012)

2012 37. The Pierre Auger Collaboration, A Search for Point Sources of EeV Neutrons, ApJ **760** (2) 148–159 (2012)

2012 36. The Pierre Auger Collaboration, Results of a self-triggered prototype system for radio-detection of extensive air showers at the Pierre Auger Observatory, JINST **7** P11023–P11051 (2012)

2012 35. The Pierre Auger Collaboration, Antennas for the detection of radio emission pulses from cosmic-ray induced air showers at the Pierre Auger Observatory, JINST **7** P10011–P10022 (2012)

2012 34. The Pierre Auger Collaboration, The rapid atmospheric monitoring system of the Pierre Auger Observatory, JINST **7** P09001–P09014 (2012)

2012 33. The Pierre Auger Collaboration, Measurement of the Proton-Air Cross Section at $\sqrt{s} = 57$ TeV with the Pierre Auger Observatory, PRL **109** 062002–062011 (2012)

2012 32. The Pierre Auger Collaboration, 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, ApJ **755** (1) L4 (2012)

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2009 10. H. Asorey[Pierre Auger Collaboration], The Acceptance of the Pierre Auger Observatory, poster presentation in the VII Latinamerican Symposium of High Energy Physics SILAFAE 2009, San Carlos de Bariloche, Argentina, 14-21 Jan 2009.

2008 9. XVI Course of the ISCRA (International School of Cosmic Ray Astrophysics) 2008: "Gamma Ray and Cosmic Ray Astrophysics: From below GeV to beyond EeV Energies", Erice, Italia, Julio 2008

2008 8. Invited talk "Towards Cosmic ray Solar Modulation Studies", University of Siegen, Siegen, Germany, 2008.

2007 7. D. Allard et al. [LAGO Collaboration], Looking for the high energy component of GRBs at the Large Aperture GRB Observatory, in Proc. 30th International Cosmic Ray Conference, Mérida, Mexico, 3-11 Jul 2007.

2007 6. IV Latin American School of Strings LASS 07, San Carlos de Bariloche, January 2007.

2006 5. H. Asorey[Pierre Auger Collaboration], The Surface Detector Array of the Pierre Auger Observatory, parallel talk in the 1st International Workshop of High Energy Physics in the LHC Era HEP2006, Valparaiso, Chile, 12–17 Dec 2006.

2006 4. D. Allard et al. [LAGO Collaboration], The Large Aperture GRB aperture, in Proc. of the Observational Astronomy in Argentina Workshop, Buenos Aires.

2005 3. Third CERN-CLAF Latin American School Of High Energy Physics, CERN, Malargüe, Argentina. Poster: "Event Reconstruction using the Surface Detectors At UHECR Pierre Auger Observatory"

2004 2. Sixth J. J. Giambiagi Winter School on Particle Physics, Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires. July 2004.

2005-2015 1. Thirty seven technical and physics talks given at the Pierre Auger Collaboration meetings, Malargüe, Argentina.