Rapport d'activité LPNHE 2020–2021
Liste de publications du groupe Auger

27 février 2022

Articles

1. P. Abreu, M. Aglietta, J. M. Albury et al. « 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 ». *European Physical Journal C* 81.11, 966 (nov. 2021), p. 966. DOI : 10.1140/epjc/s10052-021-09700-w
2. A. Aab, P. Abreu, M. Aglietta et al. « Design and implementation of the AMIGA embedded system for data acquisition ». *Journal of Instrumentation* 16.7, T07008 (juil. 2021), T07008. DOI : 10.1088/1748-0221/16/07/T07008
3. A. Aab, P. Abreu, M. Aglietta et al. « Deep-learning based reconstruction of the shower maximum X_{max} using the water-Cherenkov detectors of the Pierre Auger Observatory ». *Journal of Instrumentation* 16.7, P07019 (juil. 2021), P07019. DOI : 10.1088/1748-0221/16/07/P07019
4. A. Aab, P. Abreu, M. Aglietta et al. « Extraction of the muon signals recorded with the surface detector of the Pierre Auger Observatory using recurrent neural networks ». *Journal of Instrumentation* 16.7, P07016 (juil. 2021), P07016. DOI : 10.1088/1748-0221/16/07/P07016
5. A. Aab, P. Abreu, M. Aglietta et al. « The FRAM robotic telescope for atmospheric monitoring at the Pierre Auger Observatory ». *Journal of Instrumentation* 16.6, P06027 (juin 2021), P06027. DOI : 10.1088/1748-0221/16/06/P06027. arXiv : 2101.11602 [astro-ph.IM]
6. A. Aab, P. Abreu, M. Aglietta et al. « Measurement of the Fluctuations in the Number of Muons in Extensive Air Showers with the Pierre Auger Observatory ». *Phys. Rev. Lett.* 126.15, 152002 (avr. 2021), p. 152002. DOI : 10.1103/PhysRevLett.126.152002. arXiv : 2102.07797 [hep-ex]
7. Pierre Auger Collaboration, A. Aab, P. Abreu et al. « Calibration of the underground muon detector of the Pierre Auger Observatory ». *Journal of Instrumentation* 16.4, P04003 (avr. 2021), P04003. DOI : 10.1088/1748-0221/16/04/P04003. arXiv : 2012.08016 [astro-ph.IM]

8. A. Aab et al. « Design, upgrade and characterization of the silicon photomultiplier front-end for the AMIGA detector at the Pierre Auger Observatory ». *JINST* 16.01 (2021), P01026. DOI : 10.1088/1748-0221/16/01/P01026. arXiv : 2011.06633 [astro-ph.IM]

9. The Pierre Auger Collaboration. « The Pierre Auger Observatory and its Upgrade ». *Science Reviews – from the end of the world* 1.4 (sept. 2020). DOI : 10.52712/sciencereviews.v1i4.31

10. A. Aab, P. Abreu, M. Aglietta et al. « Reconstruction of events recorded with the surface detector of the Pierre Auger Observatory ». *Journal of Instrumentation* 15.10 (oct. 2020), P10021. DOI : 10.1088/1748-0221/15/10/P10021. arXiv : 2007.09035 [astro-ph.IM]

11. A. Aab, P. Abreu, M. Aglietta et al. « A Search for Ultra-high-energy Neutrinos from TXS 0506+056 Using the Pierre Auger Observatory ». *ApJ* 902.2, 105 (oct. 2020), p. 105. DOI : 10.3847/1538-4357/abb476. arXiv : 2010.10953 [astro-ph.HE]

12. A. Aab, P. Abreu, M. Aglietta et al. « Erratum : Search for photons with energies above 10^{18} eV using the hybrid detector of the Pierre Auger Observatory Erratum : Search for photons with energies above ^{18} eV using the hybrid detector of the Pierre Auger Observatory ». *J. Cosmology Astropart. Phys.* 2020.9, E02 (sept. 2020), E02. DOI : 10.1088/1475-7516/2020/09/E02

13. A. Aab, P. Abreu, M. Aglietta et al. « Features of the Energy Spectrum of Cosmic Rays above 2.5 $\times 10^{18}$ eV Using the Pierre Auger Observatory ». *Phys. Rev. Lett.* 125.12, 121106 (sept. 2020), p. 121106. DOI : 10.1103/PhysRevLett.125.121106. arXiv : 2008.06488 [astro-ph.HE]

14. A. Aab, P. Abreu, M. Aglietta et al. « Measurement of the cosmic-ray energy spectrum above 2.5 $\times 10^{18}$ eV using the Pierre Auger Observatory ». *Phys. Rev. D* 102.6, 062005 (sept. 2020), p. 062005. DOI : 10.1103/PhysRevD.102.062005. arXiv : 2008.06486 [astro-ph.HE]

15. A. Aab, P. Abreu, M. Aglietta et al. « Studies on the response of a water-Cherenkov detector of the Pierre Auger Observatory to atmospheric muons using an RPC hodoscope ». *Journal of Instrumentation* 15.9 (sept. 2020), P09002. DOI : 10.1088/1748-0221/15/09/P09002

16. A. Aab, P. Abreu, M. Aglietta et al. « Direct measurement of the muonic content of extensive air showers between 2 $\times 10^{17}$ and 2 $\times 10^{18}$ eV at the Pierre Auger Observatory ». *European Physical Journal C* 80.8, 751 (août 2020), p. 751. DOI : 10.1140/epjc/s10052-020-8055-y

17. A. Aab, P. Abreu, M. Aglietta et al. « Search for magnetically-induced signatures in the arrival directions of ultra-high-energy cosmic rays measured at the Pierre Auger Observatory ». *J. Cosmology Astropart. Phys.* 2020.6, 017 (juin 2020), p. 017. DOI : 10.1088/1475-7516/2020/06/017. arXiv : 2004.10591 [astro-ph.HE]

18. K.-D. Merenda, R. Mussa et L. Wiencke. « Catching elves in Argentina ». *Eos* 101 (juin 2020). DOI : 10.1029/2020EO145248

19. A. Aab, P. Abreu, M. Aglietta et al. « Cosmic-Ray Anisotropies in Right Ascension Measured by the Pierre Auger Observatory ». *ApJ* 891.2, 142 (mar. 2020), p. 142. DOI : 10.3847/1538-4357/ab7236. arXiv : 2002.06172 [astro-ph.HE]

20. A. Aab, P. Abreu, M. Aglietta et al. « 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, e00582 (avr. 2020), e00582. DOI : 10.1029/2019EA000582