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RESEARCH EXPERIENCE

Donostia International Physics Center — Donostia–San Sebastián, Gipuzkoa, Spain
Ikerbasque Research Fellow — *Sept. 2024 – present*
"la Caixa" Foundation's Junior Leader — *Sept. 2022 – present*

- Run coordinator of the NEXT-100 experiment.
- R&D of wavelength shifting fibers and photodetectors for the NEXT-HD detector.
- Positron emission tomography with cryogenic CsI crystals.

Lawrence Berkeley National Laboratory — Berkeley, CA, United States
Owen Chamberlain Postdoctoral Fellow — *Sept. 2019 – Sept. 2022*

- Assembly and testing of pixelated LArTPC prototypes, leading developer of the near detector simulation framework with GPU algorithms for the DUNE collaboration.
- Monte Carlo samples production manager, development of deep learning methods for particle identification for the Mu2e collaboration.

Harvard University — Cambridge, MA, United States
Postdoctoral Fellow — *Apr. 2019 – Aug. 2019*
Graduate Fellow — *Sept. 2017 – Mar. 2019*

- First measurement of cosmic-ray reconstruction efficiency in a LArTPC.
- Leading analyzer of the low-energy excess search for the MicroBooNE collaboration.

INFN Frascati National Laboratories — Frascati, Rome, Italy
Graduate Fellow — *Feb. – Sept. 2015*

- Full characterization of the first electromagnetic calorimeter prototype for the Mu2e experiment. Three test beams and radiation-hardness tests.

EDUCATION

University of Oxford — Oxford, United Kingdom
Ph.D. in Particle Physics — *Mar. 2019*

- Thesis: "Search for a low-energy excess of electron neutrinos in MicroBooNE"
- Advisors: Roxanne Guenette, Alfons Weber

Sapienza University of Rome — Rome, Italy
Master (Laurea magistrale) *in Physics* — *Jan. 2015*

- Thesis: "Study of requirements and performances of the electromagnetic calorimeter for the Mu2e experiment at Fermilab"
- Advisors: Stefano Miscetti, Cesare Bini

Sapienza University of Rome — Rome, Italy
Bachelor (Laurea) *in Physics* — *Oct. 2012*

TEACHING & TUTORING EXPERIENCE

- PhD advisor (M. del Barrio-Torregrosa, M. Seemann, L. Navarro-Cozcolluela) at the **University of the Basque Country** 2022 – present
- Bachelor's thesis advisor (P. Muñoz Izquierdo) at the **Polytechnic University of Valencia** 2025
- Supervisor for the DIPC summer internship program 2023 – present
- Undergraduate academic research project advisor (R. Wang) at the **University of California - Berkeley** 2021
- Tutor for the **Harvard University summer student program** 2018
- Tutor for the **University of Oxford summer student program** 2017
- Demonstrator in the **Optics laboratory of the University of Oxford** 2017

GRANTS

- BasQ – IBM Joint Research Program JRA3 (€50,824) 2025
- Ikerbasque startup fund (€10,000) 2024
- Proyecto de Investigación Básica del Gobierno Vasco PUE24-10 (€75,721) 2024 – 2025
- "la Caixa" Foundation's Junior Leader LCF/BQ/PI22/11910019 (€305,100) 2022 – 2025

FELLOWSHIPS & SCHOLARSHIPS

- Owen Chamberlain Postdoctoral Fellowship at the Lawrence Berkeley National Laboratory 2019 – 2022
- Ermenegildo Zegna Founder's Scholarship 2015 – 2017
- University of Oxford St Catherine's College Graduate Scholarship 2016 – 2017
- INFN Postgraduate Scholarship 2015
- INFN - Fermilab Summer Student Scholarship 2013
- University College "Lamaro Pozzani"Scholarship 2009 – 2014

PROFESSIONAL ACTIVITIES

- **Referee** for the Journal of Instrumentation, the European Physical Journal C, and the Journal of Advanced Instrumentation in Science 2021 – present
- **APS April Meeting 2024** organizing committee 2023
- **Qiskit training session**, IBM-Euskadi Quantum Computational Center 2023
- **GPU Hackathon**, Simon Fraser University 2021
- **Computational and Data Science Training for High Energy Physics**, Princeton University 2019
- **International Neutrino Summer School**, ICISE, Vietnam 2016
- **Fermilab Summer Student**, Fermilab 2013

OUTREACH & COMMUNITY

- **UPV/EHU Semana de la Ciencia, la Tecnología y la Innovación** 2024
- School students guide at DIPC 2024
- **NEXT collaboration website** https://next-experiment.org 2023
- **Early Career Member-at-Large**, American Physical Society, Topical Group on Data Science 2022 – 2024
- **DIPC neutrino group website** https://neutrino.dipc.org 2022

- **Nuclear Science Day for Scouts** at the Lawrence Berkeley National Laboratory 2021
- Developer and maintainer of a **neutrino preprints Twitter bot** `@nuarxiv` 2020
- Re-design of the **MicroBooNE collaboration website** `https://microboone.fnal.gov` 2017
- Marking of **British Physics Olympiads** papers at the University of Oxford 2015 – 2016
- Orientation and welcoming events at the University of Oxford 2015 – 2016

PRESENTATIONS & TALKS

Invited talks

- **COSI science team invited seminar**, *COCOA: a compact Compton camera for astrophysical observation of MeV-scale gamma rays* , UC Berkeley (remote), June 2025
- **RCNS invited seminar**, *Searching for neutrinoless double beta decay with the NEXT experiment*, Tohoku University, April 2025
- **LLP2024**, *SHiNESS: Searching for Hidden Neutrinos at the European Spallation Source*, University of Tokyo, July 2024
- **NERSC Annual Meeting**, *Highly-parallelized simulation of a pixelated LArTPC on a GPU*, Lawrence Berkeley National Laboratory, Sept. 2023
- **University of Oxford invited seminar**, *The NEXT step in the quest for neutrinoless double beta decay*, Oxford, United Kingdom, February 2023
- **UC Berkeley PHYS 290E invited seminar**, *Machine Learning and Artificial Intelligence at the intensity frontier*, University of California Berkeley, Mar. 2022
- **Yale WIDG invited seminar**, *Demonstration of a novel, ton-scale, single-phase LArTPC with pixelated readout*, Wright Lab, Yale University, Nov. 2021
- **Machine Learning Group Meeting invited talk**, *Simulation of a neutrino detector using GPU algorithms*, Lawrence Berkeley National Laboratory, Sept. 2021
- **Research Progress Meeting invited seminar**, *Search for a low-energy excess at MicroBooNE*, Lawrence Berkeley National Laboratory, Jan. 2019

Conference talks

- **ASAPP 2025**, *COCOA: a compact Compton camera for astrophysical observation of MeV-scale gamma rays*, Sant Feliu de Guíxols, Spain, May 2025
- **The Fundamental Nuclear and Particle Physics at the ESS workshop**, *Search for Hidden Neutrinos: the SHiNESS experiment*, Lund, Sweden, January 2025
- **ICHEP 2024**, *Cryogenic CsI crystals for positron emission tomography*, Prague, Czech Republic, July 2024
- **PSMR 2024**, *Cryogenic CsI as a potential PET material*, Elba, Italy, May 2024
- **XV CPAN days**, *Searching for neutrinoless double beta decay with the NEXT experiment*, Santander, Spain, October 2023
- **LIDINE 2023**, *Towards a fiber barrel detector for next-generation high-pressure gaseous xenon TPCs*, Madrid, Spain, June 2023
- **XeSAT2023**, *Searching for neutrinoless double beta decay with NEXT*, Nantes Université, France, June 2023
- **Neutrino 2022**, *Demonstration of a novel, ton-scale, single-phase LArTPC with pixelated readout* (poster), Seoul, South Korea (remote), May 2022
- **ROOT Users Workshop**, *Mu2e Analysis Models*, CERN (remote), May 2022
- **HEP Software Foundation Frameworks Working Group**, *Mu2e and its Framework Usage*, Fermilab (remote), May 2022
- **APS April Meeting 2022**, *Demonstration of a novel, ton-scale, single-phase LArTPC with pixelated readout*, New York, United States Apr. 2022

- **APS April Meeting 2021**, *Highly-parallelized simulation of a 3D pixelated charge readout for liquid argon time projection chambers*, Apr. 2021
- **PHYSTAT-nu 2019**, *Status of the MicroBooNE low-energy excess and evaluation of the systematic uncertainties* (poster), CERN, Switzerland, Jan. 2019
- **Neutrino 2018**, *Electron-neutrino reconstruction and selection in the MicroBooNE LArTPC using the Pandora pattern recognition* (poster), Heidelberg, Germany, June 2018
- **MASS 2018**, *MicroBooNE status and recent results*, University of Southern Denmark, Odense, Denmark, May 2018
- **DPF 2017**, *Cosmic-ray reconstruction efficiency and detector performances in the MicroBooNE experiment*, Fermilab, United States, July 2017
- **WIN 2017**, *Detector performance and cosmic-ray reconstruction efficiency in MicroBooNE*, University of California Irvine, United States, June 2017
- **NNN 2016**, *Cosmic-ray reconstruction efficiency with the MicroBooNE detector*, IHEP, Beijing, China, Nov. 2016
- **NuPhys 2015**, *The Muon Counter System of the MicroBooNE experiment*, Queen Mary University, London, United Kingdom, Dec. 2015
- **IFAE 2015**, *Characterization of the prototype for the Mu2e electromagnetic calorimeter*, University of Rome Tor Vergata, Rome, Italy, Apr. 2015
- **SIF National Congress**, *The electromagnetic calorimeter of the Mu2e experiment*, University of Pisa, Pisa, Italy, Sept. 2014

Publications list

Bold font indicates leading contributions and/or corresponding authorship.

[1] **S. R. Soleti *et al.* [LiquidO], "COCOA: A compact Compton camera for astrophysical observation of MeV-scale gamma rays," Astropart. Phys. 172 (2025), 103135** doi:10.1016/j.astropartphys.2025.103135 [arXiv:2502.20916 [astro-ph.IM]]**.**

[2] C. Cantone *et al.* "Crilin: A novel calorimeter proposal for the $\sqrt{s}$ = 10 TeV Muon Collider — Simulations and prototype tests results," Nucl. Instrum. Meth. A **1079** (2025), 170617 doi:10.1016/j.nima.2025.170617.

[3] J. Apilluelo *et al.* [LiquidO], "Characterization of a radiation detector based on opaque water-based liquid scintillator," Nucl. Instrum. Meth. A **1071** (2025), 170075 doi:10.1016/j.nima.2024.170075 [arXiv:2406.13054 [physics.ins-det]].

[4] T. Contreras *et al.* [NEXT], "Measurement of energy resolution with the NEXT-White silicon photomultipliers," JHEP **09** (2024), 112 doi:10.1007/JHEP09(2024)112 [arXiv:2405.20427 [hep-ex]].

[5] N. K. Byrnes *et al.* [NEXT], "Fluorescence imaging of individual ions and molecules in pressurized noble gases for barium tagging in ^{136}Xe," Nature Commun. **15** (2024) no.1, 10595 doi:10.1038/s41467-024-54872-0 [arXiv:2406.15422 [physics.ins-det]].

[6] A. Abed Abud *et al.* [DUNE], "Supernova pointing capabilities of DUNE," Phys. Rev. D **111** (2025) no.9, 092006 doi:10.1103/PhysRevD.111.092006 [arXiv:2407.10339 [hep-ex]].

[7] **A. Abed Abud *et al.* [DUNE], "Performance of a Modular Ton-Scale Pixel-Readout Liquid Argon Time Projection Chamber," Instruments 8 (2024) no.3, 41** doi:10.3390/instruments8030041 [arXiv:2402.01568 [physics.ins-det]]**.**

[8] A. Abed Abud *et al.* [DUNE], "Doping liquid argon with xenon in ProtoDUNE Single-Phase: effects on scintillation light," JINST **19** (2024) no.08, P08005 doi:10.1088/1748-0221/19/08/P08005 [arXiv:2402.01568 [physics.ins-det]].

[9] **S. R. Soleti [NEXT], "Towards a fiber barrel detector for next-generation high-pressure gaseous xenon TPCs," JINST 19 (2024) 04, C04042** [arXiv:2312.05567 [physics.ins-det]]**.**

[10] A. Abed Abud *et al.* [DUNE], "The DUNE Far Detector Vertical Drift Technology. Technical Design Report," JINST **19** (2024) no.08, T08004 doi:10.1088/1748-0221/19/08/T08004 [arXiv:2312.03130 [hep-ex]].

[11] **S. R. Soleti *et al.* "Search for Hidden Neutrinos at the European Spallation Source: the SHiNESS experiment," JHEP 2024, 148 (2024)** doi:10.1007/JHEP03(2024)148 [arXiv:2311.18509 [hep-ex]]**.**

[12] K. Mistry *et al.* [NEXT], "Design, characterization and installation of the NEXT-100 cathode and electroluminescence regions," JINST **19** (2024) no.02, P02007 doi:10.1088/1748-0221/19/02/P02007 [arXiv:2311.03528 [physics.ins-det]].

[13] P. Novella *et al.* [NEXT], "Demonstration of neutrinoless double beta decay searches in gaseous xenon with NEXT," JHEP **09**, 190 (2023) doi:10.1007/JHEP09(2023)190 [arXiv:2305.09435 [nucl-ex]].

[14] N. K. Byrnes *et al.* [NEXT], "NEXT-CRAB-0: a high pressure gaseous xenon time projection chamber with a direct VUV camera based readout," JINST **18**, no.08, P08006 (2023) doi:10.1088/1748-0221/18/08/P08006 [arXiv:2304.06091 [physics.ins-det]].

[15] A. Abed Abud *et al.* [DUNE], "Impact of cross-section uncertainties on supernova neutrino spectral parameter fitting in the Deep Underground Neutrino Experiment," Phys. Rev. D **107**, no.11, 112012 (2023) doi:10.1103/PhysRevD.107.112012 [arXiv:2303.17007 [hep-ex]].

[16] K. E. Navarro *et al.* [NEXT], "A compact dication source for Ba^{2+} tagging and heavy metal ion sensor development," JINST **18**, no.07, P07044 (2023) doi:10.1088/1748-0221/18/07/P07044 [arXiv:2303.01522 [physics.ins-det]].

[17] **A. Abed Abud *et al.* [DUNE], "Highly-parallelized simulation of a pixelated LArTPC on a GPU," JINST 18, no.04, P04034 (2023)** doi:10.1088/1748-0221/18/04/P04034 [arXiv:2212.09807 [physics.comp-ph]].

[18] F. Abdi *et al.* [Mu2e], "Mu2e Run I Sensitivity Projections for the Neutrinoless $\mu^- \to e^-$ Conversion Search in Aluminum," Universe **9**, no.1, 54 (2023) doi:10.3390/universe9010054 [arXiv:2210.11380 [hep-ex]].

[19] A. Abed Abud *et al.* [DUNE], "Separation of track- and shower-like energy deposits in ProtoDUNE-SP using a convolutional neural network," Eur. Phys. J. C **82**, no.10, 903 (2022) doi:10.1140/epjc/s10052-022-10791-2 [arXiv:2203.17053 [physics.ins-det]].

[20] A. Abed Abud *et al.* [DUNE], "Scintillation light detection in the 6-m drift-length ProtoDUNE Dual Phase liquid argon TPC," Eur. Phys. J. C **82** (2022) no.7, 618 doi:10.1140/epjc/s10052-022-10549-w [arXiv:2203.16134 [physics.ins-det]].

[21] **P. Abratenko *et al.* [MicroBooNE], "Search for an anomalous excess of charged-current ν_e interactions without pions in the final state with the MicroBooNE experiment," Phys. Rev. D 105, no.3, 035501 (2022)** doi:10.1103/PhysRevD.105.112004 [arXiv:2110.14065 [hep-ex]].

[22] **P. Abratenko *et al.* [MicroBooNE], "Search for an Excess of Electron Neutrino Interactions in MicroBooNE Using Multiple Final State Topologies," Phys. Rev. Lett. 128 (2022) no. 24, 241801** doi:10.1103/PhysRevLett.128.241801 [arXiv:2110.14054 [hep-ex]].

[23] A. Edmonds *et al.* [AlCap], "A Measurement of Proton, Deuteron, Triton and Alpha Particle Emission after Nuclear Muon Capture on Al, Si and Ti with the AlCap Experiment," Phys. Rev. C **105**, no.3, 035501 (2022) doi:10.1103/PhysRevC.105.035501 [arXiv:2110.10228 [physics.ins-det]].

[24] **A. A. Abud *et al.* [DUNE], "Deep Underground Neutrino Experiment (DUNE) Near Detector Conceptual Design Report," Instruments 5 (2021) no.4, 31** doi:10.3390/instruments5040031 [arxiv:2103.13910 [hep-ex]].

[25] A. A. Abud *et al.* [DUNE], "Low exposure long-baseline neutrino oscillation sensitivity of the DUNE experiment," Phys. Rev. D **105**, no.7, 072006 (2022) doi:10.1103/PhysRevD.105.072006 [arxiv:2109.01304 [hep-ex]].

[26] A. A. Abud *et al.* [DUNE], "Design, construction and operation of the ProtoDUNE-SP Liquid Argon TPC," JINST **17**, no.01, P01005 (2022) doi:10.1088/1748-0221/17/01/P01005 [arxiv:2108.01902 [physics.ins-det]].

[27] A. A. Abud *et al.* [DUNE], "Searching for Solar KDAR with DUNE," JCAP **10**, 065 (2021) doi:10.1088/1475-7516/2021/10/065 [arxiv:2107.09109 [hep-ex]].

[28] P. Abratenko *et al.* [MicroBooNE], "Cosmic Ray Background Rejection with Wire-Cell LArTPC Event Reconstruction in the MicroBooNE Detector," Phys. Rev. Applied **15** (2021) no.6, 064071 doi:10.1103/PhysRevApplied.15.064071 [arxiv:2101.05076 [physics.ins-det]].

[29] P. Abratenko *et al.* [MicroBooNE], "Measurement of the flux-averaged inclusive charged-current electron neutrino and antineutrino cross section on argon using the NuMI beam and the MicroBooNE detector," Phys. Rev. D **104** (2021) no.5, 052002 doi:10.1103/PhysRevD.104.052002 [arxiv:2101.04228 [hep-ex]].

[30] **P. Abratenko *et al.* [MicroBooNE], "Measurement of the atmospheric muon rate with the MicroBooNE Liquid Argon TPC," JINST 16 (2021) no.04, P04004** doi:10.1088/1748-0221/16/04/P04004 [arxiv:2012.14324 [physics.ins-det]].

[31] P. Abratenko *et al.* [MicroBooNE], "Semantic segmentation with a sparse convolutional neural network for event reconstruction in MicroBooNE," Phys. Rev. D **103** (2021) no.5, 052012 doi:10.1103/PhysRevD.103.052012 [arxiv:2012.08513 [physics.ins-det]].

[32] P. Abratenko *et al.* [MicroBooNE], "High-performance Generic Neutrino Detection in a LArTPC near the Earth's Surface with the MicroBooNE Detector," [arxiv:2012.07928 [hep-ex]], *submitted to JINST*.

[33] P. Abratenko *et al.* [MicroBooNE], "Neutrino event selection in the MicroBooNE liquid argon time projection chamber using Wire-Cell 3D imaging, clustering, and charge-light matching," JINST 16 (2021) no.06, P06043 doi:10.1088/1748-0221/16/06/P06043 [arxiv:2011.01375 [physics.ins-det]].

[34] P. Abratenko *et al.* [MicroBooNE], "Convolutional neural network for multiple particle identification in the MicroBooNE liquid argon time projection chamber," Phys. Rev. D **103** (2021) no.9, 092003 doi:10.1103/PhysRevD.103.092003 [arxiv:2010.08653 [hep-ex]].

[35] P. Abratenko *et al.* [MicroBooNE], "Measurement of differential cross sections for ν_μ -Ar charged-current interactions with protons and no pions in the final state with the MicroBooNE detector," Phys. Rev. D **102** (2020) no.11, 112013 doi:10.1103/PhysRevD.102.112013 [arxiv:2010.02390 [hep-ex]].

[36] P. Abratenko *et al.* [MicroBooNE], "The continuous readout stream of the MicroBooNE liquid argon time projection chamber for detection of supernova burst neutrinos," JINST **16** (2021) no.02, P02008 doi:10.1088/1748-0221/16/02/P02008 [arxiv:2008.13761 [physics.ins-det]].

[37] **P. Abratenko *et al.* [MicroBooNE], "Measurement of space charge effects in the MicroBooNE LArTPC using cosmic muons," JINST 15 (2020) no.12, P12037** doi:10.1088/1748-0221/15/12/P12037 [arxiv:2008.09765 [physics.ins-det]].

[38] P. Abratenko *et al.* [MicroBooNE], "Vertex-finding and reconstruction of contained two-trackneutrino events in the MicroBooNE detector," JINST **16** (2021) no.02, P02017 doi:10.1088/1748-0221/16/02/P02017 [arxiv:2002.09375 [physics.ins-det]].

[39] P. Abratenko *et al.* [MicroBooNE], "Search for Heavy Neutral Leptons Decaying into Muon-Pion Pairs in the MicroBooNE Detector," Phys. Rev. D **101** (2020) no.5, 052001 doi:10.1103/PhysRevD.101.052001 [arxiv:1911.10545 [hep-ex]].

[40] C. Adams *et al.* [MicroBooNE], "Reconstruction and Measurement of $\mathcal{O}(100)$ MeV Energy Electromagnetic Activity from $\pi^0 \to \gamma\gamma$ Decays in the MicroBooNE LArTPC," JINST **15** (2020) no.02, P02007 doi:10.1088/1748-0221/15/02/P02007 [arxiv:1910.02166 [hep-ex]].

[41] C. Adams *et al.* [MicroBooNE], "A method to determine the electric field of liquid argon time projection chambers using a UV laser system and its application in MicroBooNE," JINST **15** (2020) no.07, P07010 doi:10.1088/1748-0221/15/07/P07010 [arxiv:1910.01430 [physics.ins-det]].

[42] C. Adams *et al.* [MicroBooNE], "Calibration of the charge and energy loss per unit length of the MicroBooNE liquid argon time projection chamber using muons and protons," JINST **15** (2020) no.03, P03022 doi:10.1088/1748-0221/15/03/P03022 [arxiv:1907.11736 [physics.ins-det]].

[43] P. Abratenko *et al.* [MicroBooNE], "First Measurement of Inclusive Muon Neutrino Charged Current Differential Cross Sections on Argon at E_ν ~0.8 GeV with the MicroBooNE Detector," Phys. Rev. Lett. **123** (2019) no.13, 131801 doi:10.1103/PhysRevLett.123.131801 [arxiv:1905.09694 [hep-ex]].

[44] **C. Adams *et al.* [MicroBooNE], "Design and construction of the MicroBooNE Cosmic Ray Tagger system," JINST 14 (2019) no.04, P04004** doi:10.1088/1748-0221/14/04/P04004 [arxiv:1901.02862 [physics.ins-det]].

[45] C. Adams *et al.* [MicroBooNE], "Rejecting cosmic background for exclusive charged current quasi elastic neutrino interaction studies with Liquid Argon TPCs; a case study with the MicroBooNE detector," Eur. Phys. J. C **79** (2019) no.8, 673 doi:10.1140/epjc/s10052-019-7184-7 [arxiv:1812.05679 [physics.ins-det]].

[46] C. Adams *et al.* [MicroBooNE], "First measurement of ν_μ charged-current π^0 production on argon with the MicroBooNE detector," Phys. Rev. D **99** (2019) no.9, 091102 doi:10.1103/PhysRevD.99.091102 [arxiv:1811.02700 [hep-ex]].

[47] C. Adams *et al.* [MicroBooNE], "Deep neural network for pixel-level electromagnetic particle identification in the MicroBooNE liquid argon time projection chamber," Phys. Rev. D **99** (2019) no.9, 092001 doi:10.1103/PhysRevD.99.092001 [arxiv:1808.07269 [hep-ex]].

[48] C. Adams *et al.* [MicroBooNE], "Comparison of ν_μ-Ar multiplicity distributions observed by MicroBooNE to GENIE model predictions," Eur. Phys. J. C **79** (2019) no.3, 248 doi:10.1140/epjc/s10052-019-6742-3 [arxiv:1805.06887 [hep-ex]].

[49] C. Adams *et al.* [MicroBooNE], "Ionization electron signal processing in single phase LArTPCs. Part II. Data/simulation comparison and performance in MicroBooNE," JINST **13** (2018) no.07, P07007 doi:10.1088/1748-0221/13/07/P07007 [arxiv:1804.02583 [physics.ins-det]].

[50] C. Adams *et al.* [MicroBooNE], "Ionization electron signal processing in single phase LArTPCs. Part I. Algorithm Description and quantitative evaluation with MicroBooNE simulation," JINST **13** (2018) no.07, P07006 doi:10.1088/1748-0221/13/07/P07006 [arxiv:1802.08709 [physics.ins-det]].

[51] R. Acciarri *et al.* [MicroBooNE], "The Pandora multi-algorithm approach to automated pattern recognition of cosmic-ray muon and neutrino events in the MicroBooNE detector," Eur. Phys. J. C **78** (2018) no.1, 82 doi:10.1140/epjc/s10052-017-5481-6 [arxiv:1708.03135 [hep-ex]].

[52] **R. Acciarri *et al.* [MicroBooNE], "Measurement of cosmic-ray reconstruction efficiencies in the MicroBooNE LArTPC using a small external cosmic-ray counter," JINST 12 (2017) no.12, P12030** doi:10.1088/1748-0221/12/12/P12030 [arxiv:1707.09903 [hep-ex]].

[53] R. Acciarri *et al.* [MicroBooNE], "Noise Characterization and Filtering in the MicroBooNE Liquid Argon TPC," JINST **12** (2017) no.08, P08003 doi:10.1088/1748-0221/12/08/P08003 [arxiv:1705.07341 [physics.ins-det]].

[54] R. Acciarri *et al.* [MicroBooNE], "Michel Electron Reconstruction Using Cosmic-Ray Data from the MicroBooNE LArTPC," JINST **12** (2017) no.09, P09014 doi:10.1088/1748-0221/12/09/P09014 [arxiv:1704.02927 [physics.ins-det]].

[55] P. Abratenko *et al.* [MicroBooNE], "Determination of muon momentum in the MicroBooNE LArTPC using an improved model of multiple Coulomb scattering," JINST **12** (2017) no.10, P10010 doi:10.1088/1748-0221/12/10/P10010 [arxiv:1703.06187 [physics.ins-det]].

[56] **O. Atanova *et al.* "Measurement of the energy and time resolution of a undoped CsI + MPPC array for the Mu2e experiment," JINST 12 (2017) no.05, P05007** doi:10.1088/1748-0221/12/05/P05007 [arxiv:1702.03720 [physics.ins-det]].

[57] R. Acciarri *et al.* [MicroBooNE], "Design and Construction of the MicroBooNE Detector," JINST **12** (2017) no.02, P02017 doi:10.1088/1748-0221/12/02/P02017 [arxiv:1612.05824 [physics.ins-det]].

[58] M. Auger *et al.* "A Novel Cosmic Ray Tagger System for Liquid Argon TPC Neutrino Detectors," Instruments **1** (2017) no.1, 2 doi:10.3390/instruments1010002 [arxiv:1612.04614 [physics.ins-det]].

[59] R. Acciarri *et al.* [MicroBooNE], "Convolutional Neural Networks Applied to Neutrino Events in a Liquid Argon Time Projection Chamber," JINST **12** (2017) no.03, P03011 doi:10.1088/1748-0221/12/03/P03011 [arxiv:1611.05531 [physics.ins-det]].

[60] M. Angelucci *et al.* "Longitudinal uniformity, time performances and irradiation test of pure CsI crystals," Nucl. Instrum. Meth. A **824** (2016), 678-680 doi:10.1016/j.nima.2015.11.042 [arxiv:1606.07110 [physics.ins-det]].

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