

## PUBLICATIONS

- [57] B. Clark. “The IceCube-Gen2 Neutrino Observatory”. In: *Proc. 9th Very Large Volume Neutrino Telescopes Workshop 2021*. Aug. 2021. arXiv: [2108.05292 \[astro-ph.HE\]](#).
- [56] P. Allison et al. “A neural network based UHE neutrino reconstruction method for the Askaryan Radio Array (ARA)”. In: *PoS ICRC2021* (July 2021): *Proc. 37th International Cosmic Ray Conference*, p. 1057. DOI: [10.22323/1.395.1057](#).
- [55] P. Allison et al. “Implementing a Low-Threshold Analysis with the Askaryan Radio Array (ARA)”. In: *PoS ICRC2021* (July 2021): *Proc. 37th International Cosmic Ray Conference*, p. 1053. DOI: [10.22323/1.395.1053](#).
- [54] P. Allison et al. “A Template-based UHE Neutrino Search Strategy for the Askaryan Radio Array (ARA)”. In: *PoS ICRC2021* (July 2021): *Proc. 37th International Cosmic Ray Conference*, p. 1047. DOI: [10.22323/1.395.1047](#).
- [53] P. Allison et al. “The Calibration of the Geometry and Antenna Delay in Askaryan Radio Array Station 4 and 5”. In: *PoS ICRC2021* (July 2021): *Proc. 37th International Cosmic Ray Conference*, p. 1086. DOI: [10.22323/1.395.1086](#).
- [52] R. Abbasi et al. “Searching for Neutrino Transients Below 1 TeV with IceCube”. In: *PoS ICRC2021* (July 2021): *Proc. 37th International Cosmic Ray Conference*, p. 1131. DOI: [10.22323/1.395.1131](#). arXiv: [2108.01530 \[astro-ph.HE\]](#).
- [51] R. Abbasi et al. “Characterization of the PeV astrophysical neutrino energy spectrum with IceCube using down-going tracks”. In: *PoS ICRC2021* (July 2021): *Proc. 37th International Cosmic Ray Conference*, p. 1137. DOI: [10.22323/1.395.1137](#). arXiv: [2107.14298 \[astro-ph.HE\]](#).
- [50] R. Abbasi et al. “Search for dark matter annihilation in the center of the Earth with 8 years of IceCube data”. In: *PoS ICRC2021* (July 2021): *Proc. 37th International Cosmic Ray Conference*, p. 526. DOI: [10.22323/1.395.1131](#). arXiv: [2107.11244 \[astro-ph.HE\]](#).

- [49] R. Abbasi et al. “Searching for time-dependent high-energy neutrino emission from X-ray binaries with IceCube”. In: *PoS ICRC2021* (July 2021): *Proc. 37th International Cosmic Ray Conference*, p. 1136. DOI: [10.22323/1.395.1136](#). arXiv: [2107.12383 \[astro-ph.HE\]](#).
- [48] R. Abbasi et al. “Reconstructing Neutrino Energy using CNNs for GeV Scale IceCube Events”. In: *PoS ICRC2021* (July 2021): *Proc. 37th International Cosmic Ray Conference*, p. 1053. DOI: [10.22323/1.395.1053](#). arXiv: [2107.11446 \[astro-ph.HE\]](#).
- [47] R. Abbasi et al. “Gravitational Wave Follow-Up Using Low Energy Neutrinos in IceCube DeepCore”. In: *PoS ICRC2021* (July 2021): *Proc. 37th International Cosmic Ray Conference*, p. 939. DOI: [10.22323/1.395.0939](#). arXiv: [2107.11285 \[astro-ph.HE\]](#).
- [46] R. Abbasi et al. “Discrimination of muons for mass composition studies of inclined air showers detected with IceTop”. In: *PoS ICRC2021* (July 2021): *Proc. 37th International Cosmic Ray Conference*, p. 212. DOI: [10.22323/1.395.0212](#). arXiv: [2107.11293 \[astro-ph.HE\]](#).
- [45] R. Abbasi et al. “New Flux Limits in the Low Relativistic Regime for Magnetic Monopoles at IceCube”. In: *PoS ICRC2021* (July 2021): *Proc. 37th International Cosmic Ray Conference*, p. 212. DOI: [10.22323/1.395.0534](#). arXiv: [2107.10548 \[astro-ph.HE\]](#).
- [44] R. Abbasi et al. “Searching for High-Energy Neutrinos from Core-Collapse Supernovae with IceCube”. In: *PoS ICRC2021* (July 2021): *Proc. 37th International Cosmic Ray Conference*, p. 1116. DOI: [10.22323/1.395.1116](#). arXiv: [2107.09317 \[astro-ph.HE\]](#).
- [43] R. Abbasi et al. “Testing Hadronic Interaction Models with Cosmic Ray Measurements at the IceCube Neutrino Observatory”. In: *PoS ICRC2021* (July 2021): *Proc. 37th International Cosmic Ray Conference*, p. 357. DOI: [10.22323/1.395.0357](#). arXiv: [2107.09387 \[astro-ph.HE\]](#).
- [42] R. Abbasi et al. “Study of Mass Composition of Cosmic Rays with IceTop and IceCube”. In: *PoS ICRC2021* (July 2021): *Proc. 37th International Cosmic Ray Conference*, p. 323. DOI: [10.22323/1.395.0323](#). arXiv: [2107.09626 \[astro-ph.HE\]](#).
- [41] R. Abbasi et al. “Measuring total neutrino cross section with IceCube at intermediate energies ( $\sim 100$  GeV to a few TeV)”. In: (July 2021): *Proc. 37th International Cosmic Ray Conference*. arXiv: [2107.09764 \[astro-ph.HE\]](#).

- [40] S. Hallmann, B. Clark, C. Glaser, and D. Smith. “Sensitivity studies for the IceCube-Gen2 radio array”. In: *PoS ICRC2021 (July 2021): Proc. 37th International Cosmic Ray Conference*, p. 1183. DOI: [10.22323/1.395.1183](#). arXiv: [2107.08910 \[astro-ph.HE\]](#).
- [39] B. Clark and R. Halliday. “Simulation and sensitivities for a phased IceCube-Gen2 deployment”. In: *PoS ICRC2021 (July 2021): Proc. 37th International Cosmic Ray Conference*, p. 1186. DOI: [10.22323/1.395.1186](#). arXiv: [2107.08500 \[astro-ph.HE\]](#).
- [38] R. Abbasi et al. “Search for high-energy neutrino emission from hard X-ray AGN with IceCube”. In: *PoS ICRC2021 (July 2021): Proc. 37th International Cosmic Ray Conference*, p. 1142. DOI: [10.22323/1.395.1142](#). arXiv: [2107.08366 \[astro-ph.HE\]](#).
- [37] R. Abbasi et al. “Analysis Framework for Multi-messenger Astronomy with IceCube”. In: *PoS ICRC2021 (July 2021): Proc. 37th International Cosmic Ray Conference*, p. 1098. DOI: [10.22323/1.395.1098](#). arXiv: [2107.08254 \[astro-ph.IM\]](#).
- [36] R. Abbasi et al. “Testing the AGN Radio and Neutrino correlation using the MOJAVE catalog and 10 years of IceCube Data”. In: *PoS ICRC2021 (July 2021): Proc. 37th International Cosmic Ray Conference*, p. 949. DOI: [10.22323/1.395.094](#). arXiv: [2107.08115 \[astro-ph.HE\]](#).
- [35] R. Abbasi et al. “Search for High-Energy Neutrinos from Ultra-Luminous Infrared Galaxies with IceCube”. In: *PoS ICRC2021 (July 2021): Proc. 37th International Cosmic Ray Conference*, p. 1115. DOI: [10.22323/1.395.1115](#). arXiv: [2107.03149 \[astro-ph.HE\]](#).
- [34] J. A. Aguilar et al. “Reconstructing the neutrino energy for in-ice radio detectors: A study for the Radio Neutrino Observatory Greenland (RNO-G)”. In: (July 2021). arXiv: [2107.02604 \[astro-ph.HE\]](#).
- [33] R. Abbasi et al. “All-flavor constraints on nonstandard neutrino interactions and generalized matter potential with three years of IceCube DeepCore data”. In: (June 2021). arXiv: [2106.07755 \[hep-ex\]](#).
- [32] R. Abbasi et al. “Probing neutrino emission at GeV energies from compact binary mergers with the IceCube Neutrino Observatory”. In: (May 2021). arXiv: [2105.13160 \[astro-ph.HE\]](#).
- [31] R. Abbasi et al. “A muon-track reconstruction exploiting stochastic losses for large-scale Cherenkov detectors”. In: *JINST* 16.08 (2021), P08034. DOI: [10.1088/1748-0221/16/08/P08034](#). arXiv: [2103.16931 \[hep-ex\]](#).

- [30] R. Abbasi et al. “A Convolutional Neural Network based Cascade Reconstruction for the IceCube Neutrino Observatory”. In: *JINST* 16.07 (2021), P07041. DOI: [10.1088/1748-0221/16/07/p07041](https://doi.org/10.1088/1748-0221/16/07/p07041). arXiv: [2101.11589](https://arxiv.org/abs/2101.11589) [hep-ex].
- [29] R. Abbasi et al. “IceCube Data for Neutrino Point-Source Searches Years 2008-2018”. In: (Jan. 2021). DOI: [10.21234/CPKQ-K003](https://doi.org/10.21234/CPKQ-K003). arXiv: [2101.09836](https://arxiv.org/abs/2101.09836) [astro-ph.HE].
- [28] R. Abbasi et al. “Search for GeV neutrino emission during intense gamma-ray solar flares with the IceCube Neutrino Observatory”. In: *Phys. Rev. D* 103.10 (2021), p. 102001. DOI: [10.1103/PhysRevD.103.102001](https://doi.org/10.1103/PhysRevD.103.102001). arXiv: [2101.00610](https://arxiv.org/abs/2101.00610) [astro-ph.HE].
- [27] R. Abbasi et al. “LeptonInjector and LeptonWeighter: A neutrino event generator and weighter for neutrino observatories”. In: *Comput. Phys. Commun.* 266 (2021), p. 108018. DOI: [10.1016/j.cpc.2021.108018](https://doi.org/10.1016/j.cpc.2021.108018). arXiv: [2012.10449](https://arxiv.org/abs/2012.10449) [physics.comp-ph].
- [26] R. Abbasi et al. “Follow-up of Astrophysical Transients in Real Time with the IceCube Neutrino Observatory”. In: *Astrophys. J.* 910.1 (2021), p. 4. DOI: [10.3847/1538-4357/abe123](https://doi.org/10.3847/1538-4357/abe123). arXiv: [2012.04577](https://arxiv.org/abs/2012.04577) [astro-ph.HE].
- [25] R. Abbasi et al. “A Search for Time-dependent Astrophysical Neutrino Emission with IceCube Data from 2012 to 2017”. In: *Astrophys. J.* 911.1 (2021), p. 67. DOI: [10.3847/1538-4357/abe7e6](https://doi.org/10.3847/1538-4357/abe7e6). arXiv: [2012.01079](https://arxiv.org/abs/2012.01079) [astro-ph.HE].
- [24] R. Abbasi et al. “Search for sub-TeV neutrino emission from transient sources with three years of IceCube data”. In: (Nov. 2020). arXiv: [2011.05096](https://arxiv.org/abs/2011.05096) [astro-ph.HE].
- [23] R. Abbasi et al. “Measurement of the high-energy all-flavor neutrino-nucleon cross section with IceCube”. In: *Phys. Rev. D* 104.2 (July 2021), p. 022001. DOI: [10.1103/PhysRevD.104.022001](https://doi.org/10.1103/PhysRevD.104.022001). arXiv: [2011.03560](https://arxiv.org/abs/2011.03560) [hep-ex].
- [22] R. Abbasi et al. “The IceCube high-energy starting event sample: Description and flux characterization with 7.5 years of data”. In: *Phys. Rev. D* 104.2 (July 2021), p. 022002. DOI: [10.1103/PhysRevD.104.022002](https://doi.org/10.1103/PhysRevD.104.022002). arXiv: [2011.03545](https://arxiv.org/abs/2011.03545) [astro-ph.HE].
- [21] R. Abbasi et al. “Measurement of Astrophysical Tau Neutrinos in IceCube’s High-Energy Starting Events”. In: (Nov. 2020). arXiv: [2011.03561](https://arxiv.org/abs/2011.03561) [hep-ex].

- [20] J. A. Aguilar et al. “Design and Sensitivity of the Radio Neutrino Observatory in Greenland (RNO-G)”. In: *JINST* 16.03 (2021), P03025. DOI: [10.1088/1748-0221/16/03/P03025](https://doi.org/10.1088/1748-0221/16/03/P03025). arXiv: [2010.12279](https://arxiv.org/abs/2010.12279) [[astro-ph.IM](#)].
- [19] H. A. Ayala Solares et al. “Multimessenger Gamma-Ray and Neutrino Coincidence Alerts Using HAWC and IceCube Subthreshold Data”. In: *Astrophys. J.* 906.1 (2021), p. 63. DOI: [10.3847/1538-4357/abcaa4](https://doi.org/10.3847/1538-4357/abcaa4). arXiv: [2008.10616](https://arxiv.org/abs/2008.10616) [[astro-ph.HE](#)].
- [18] M. G. Aartsen et al. “IceCube-Gen2: the window to the extreme Universe”. In: *J. Phys. G* 48.6 (2021), p. 060501. DOI: [10.1088/1361-6471/abbd48](https://doi.org/10.1088/1361-6471/abbd48). arXiv: [2008.04323](https://arxiv.org/abs/2008.04323) [[astro-ph.HE](#)].
- [17] M. G. Aartsen et al. “Measurements of the time-dependent cosmic-ray Sun shadow with seven years of IceCube data: Comparison with the Solar cycle and magnetic field models”. In: *Phys. Rev. D* 103.4 (2021), p. 042005. DOI: [10.1103/PhysRevD.103.042005](https://doi.org/10.1103/PhysRevD.103.042005). arXiv: [2006.16298](https://arxiv.org/abs/2006.16298) [[astro-ph.HE](#)].
- [16] M. G. Aartsen et al. “Cosmic ray spectrum from 250 TeV to 10 PeV using IceTop”. In: *Phys. Rev. D* 102 (2020), p. 122001. DOI: [10.1103/PhysRevD.102.122001](https://doi.org/10.1103/PhysRevD.102.122001). arXiv: [2006.05215](https://arxiv.org/abs/2006.05215) [[astro-ph.HE](#)].
- [15] M. G. Aartsen et al. “Searching for eV-scale sterile neutrinos with eight years of atmospheric neutrinos at the IceCube Neutrino Telescope”. In: *Phys. Rev. D* 102.5 (2020), p. 052009. DOI: [10.1103/PhysRevD.102.052009](https://doi.org/10.1103/PhysRevD.102.052009). arXiv: [2005.12943](https://arxiv.org/abs/2005.12943) [[hep-ex](#)].
- [14] M. G. Aartsen et al. “eV-Scale Sterile Neutrino Search Using Eight Years of Atmospheric Muon Neutrino Data from the IceCube Neutrino Observatory”. In: *Phys. Rev. Lett.* 125.14 (2020), p. 141801. DOI: [10.1103/PhysRevLett.125.141801](https://doi.org/10.1103/PhysRevLett.125.141801). arXiv: [2005.12942](https://arxiv.org/abs/2005.12942) [[hep-ex](#)].
- [13] M. G. Aartsen et al. “IceCube Search for Neutrinos Coincident with Compact Binary Mergers from LIGO-Virgo’s First Gravitational-wave Transient Catalog”. In: *Astrophys. J. Lett.* 898.1 (2020), p. L10. DOI: [10.3847/2041-8213/ab9d24](https://doi.org/10.3847/2041-8213/ab9d24). arXiv: [2004.02910](https://arxiv.org/abs/2004.02910) [[astro-ph.HE](#)].
- [12] M. G. Aartsen et al. “IceCube Search for High-Energy Neutrino Emission from TeV Pulsar Wind Nebulae”. In: *Astrophys. J.* 898.2 (2020), p. 117. DOI: [10.3847/1538-4357/ab9fa0](https://doi.org/10.3847/1538-4357/ab9fa0). arXiv: [2003.12071](https://arxiv.org/abs/2003.12071) [[astro-ph.HE](#)].
- [11] A. Albert et al. “Combined search for neutrinos from dark matter self-annihilation in the Galactic Center with ANTARES and IceCube”. In: *Phys. Rev. D* 102.8 (2020), p. 082002. DOI: [10.1103/PhysRevD.102.082002](https://doi.org/10.1103/PhysRevD.102.082002). arXiv: [2003.06614](https://arxiv.org/abs/2003.06614) [[astro-ph.HE](#)].

- [10] P. Allison et al. “Constraints on the diffuse flux of ultrahigh energy neutrinos from four years of Askaryan Radio Array data in two stations”. In: *Phys. Rev. D* 102.4 (2020), p. 043021. DOI: [10.1103/PhysRevD.102.043021](#). arXiv: [1912.00987 \[astro-ph.HE\]](#).
- [9] M. G. Aartsen et al. “Neutrino astronomy with the next generation IceCube Neutrino Observatory”. In: (Nov. 2019). arXiv: [1911.02561 \[astro-ph.HE\]](#).
- [8] P. Allison et al. “Long-baseline horizontal radio-frequency transmission through polar ice”. In: *JCAP* 12 (2020), p. 009. DOI: [10.1088/1475-7516/2020/12/009](#). arXiv: [1908.10689 \[astro-ph.IM\]](#).
- [7] J. A. Aguilar et al. “The Next-Generation Radio Neutrino Observatory – Multi-Messenger Neutrino Astrophysics at Extreme Energies”. In: (July 2019). arXiv: [1907.12526 \[astro-ph.HE\]](#).
- [6] A. Connolly et al. “Recent Results from The Askaryan Radio Array”. In: *PoS ICRC2019* (July 2021): *Proc. 36th International Cosmic Ray Conference*, p. 858. DOI: [10.22323/1.358.0858](#). arXiv: [1907.11125 \[astro-ph.HE\]](#).
- [5] C. Glaser et al. “NuRadioMC: Simulating the radio emission of neutrinos from interaction to detector”. In: *Eur. Phys. J. C* 80.2 (2020), p. 77. DOI: [10.1140/epjc/s10052-020-7612-8](#). arXiv: [1906.01670 \[astro-ph.IM\]](#).
- [4] P. Allison et al. “Design and performance of an interferometric trigger array for radio detection of high-energy neutrinos”. In: *Nucl. Instrum. Meth. A* 930 (2019), pp. 112–125. DOI: [10.1016/j.nima.2019.01.067](#). arXiv: [1809.04573 \[astro-ph.IM\]](#).
- [3] P. Allison et al. “Observation of Reconstructable Radio Emission Coincident with an X-Class Solar Flare in the Askaryan Radio Array Prototype Station”. In: (July 2018). arXiv: [1807.03335 \[astro-ph.HE\]](#).
- [2] P. Allison et al. “Measurement of the real dielectric permittivity  $\epsilon_r$  of glacial ice”. In: *Astropart. Phys.* 108 (2019), pp. 63–73. DOI: [10.1016/j.astropartphys.2019.01.004](#). arXiv: [1712.03301 \[astro-ph.IM\]](#).
- [1] F. Kislat, B. Clark, M. Beilicke, and H. Krawczynski. “Analyzing the data from X-ray polarimeters with Stokes parameters”. In: *Astropart. Phys.* 68 (2015), pp. 45–51. DOI: [10.1016/j.astropartphys.2015.02.007](#). arXiv: [1409.6214 \[astro-ph.IM\]](#).