

Dennis Soldin

Curriculum Vitae

Name: **Dr. Dennis Soldin**
Address: University of Utah
Department of Physics and Astronomy
115 South 1400 East
Salt Lake City, UT 84112-0830, USA
Phone (office): +1 (801) 581-5398
Email: dennis.soldin@utah.edu

Employment

- Dec 2023 - present **Assistant Professor**, *University of Utah*
Department of Physics & Astronomy, Salt Lake City, UT, USA
 - *Experimental astroparticle physics (IceCube/IceTop, IceCube-Gen2, Forward Physics Facility)*
- Jul 2022 - Sep 2023 **Postdoctoral Researcher**, *Karlsruhe Institute of Technology*
Institute of Experimental Particle Physics, Karlsruhe, Germany
 - *Experimental astroparticle physics (IceCube/IceTop, IceCube-Gen2)*
- Jun 2020 - Jul 2020 **Lecturer**, *University of Delaware*
Department of Physics & Astronomy, Newark, DE, USA
 - *Physics summer course "Introductory Physics I"*
- May 2017 - May 2022 **Postdoctoral Researcher**, *University of Delaware*
Department of Physics & Astronomy and Bartol Research Institute, Newark, DE, USA
 - *Experimental astroparticle physics (IceCube/IceTop, IceCube-Gen2)*
- Oct 2011 - Sep 2016 **Doctoral Researcher**, *University of Wuppertal*
Department of Physics, Wuppertal, Germany
 - *Experimental astroparticle physics (IceCube/IceTop)*

Education

- Oct 2011 - Aug 2017 **Doctoral Studies**, *University of Wuppertal*
Department of Physics, Wuppertal, Germany
 - Dr. rer. nat. in astroparticle physics, "*Laterally Separated Muons from Cosmic Ray Air Showers Measured with the IceCube Neutrino Observatory*"
 - Supervisor: Prof. Dr. K. Helbing
- Oct 2005 - Feb 2011 **Diploma Studies**, *University of Wuppertal*
Department of Physics, Wuppertal, Germany
 - Dipl. Phys. in theoretical physics, "*Unparticle Physics and its Problems*"
 - Supervisors: Prof. Dr. M. Czakon, Prof. Dr. R. Harlander

Professional Activities

- Jul 2023 - present Member of the Forward Physics Facility Coordination Panel
- Sep 2022 - present Convener of the Forward Physics Facility Working Group for Light Hadron Production
- Jul 2022 - present Convener of the Global Cosmic Ray Observatory (GCOS) Particle Physics Working Group
- Oct 2021 - Mar 2022 Lead convener of the report on “*The Forward Physics Facility at the High-Luminosity LHC*” for Snowmass 2021
- Aug 2021 - May 2022 Lead convener of the report on “*Ultra-High Energy Cosmic Rays: The Intersection of the Cosmic and Energy Frontiers*” for Snowmass 2021
- Jul 2021 - present Member of the IceCube Impact Award Committee
- May 2021 - Oct 2021 Topical convener of the first proposal and design report for a “*Forward Physics Facility at the HL-LHC*”
- Jul 2021 Topical convener at the 37th International Cosmic Ray Conference for the session “*Muon Puzzle and EAS Modeling*”
- Jun 2020 - present Convener of the international Working Group for Hadronic Interactions and Shower Physics
- Oct 2018 - Apr 2023 Convener of the IceCube Cosmic Ray Working Group
- May 2018 - Apr 2022 Member of the IceCube Coordination Committee
- May 2018 - Apr 2022 Coordinator of IceTop Simulation Production
- May 2014 - Sep 2016 Local IceCube Simulation Production Site Manager

Service to the Department, College, University

Department of Physics & Astronomy, University of Utah, UT, USA

- Jul 2023 - present Member of the Graduate Admissions Coordination Committee
- Jul 2023 - present Member of the Futures Committee

Scientific Memberships

- Jan 2024 - present Member of the Telescope Array Collaboration
- Jul 2018 - present Member of the international Working Group for Hadronic Interactions and Shower Physics
- Oct 2011 - present Member of the IceCube Collaboration

Conference Organization

- Jun 2023 **6th Forward Physics Facility Meeting**, CERN, Geneva, Swiss
- Nov 2022 **5th Forward Physics Facility Meeting**, CERN, Geneva, Swiss
- Jan 2022 **4th Forward Physics Facility Meeting**, Virtual

Journal Referee

Scientific Journals Physical Review Letters, Physical Review D, Astroparticle Physics, European Physical Journal C, Journal of Instrumentation, SciPost, iScience

Visiting Research

Sep 2019 **Karlsruhe Institute of Technology**, Germany
Institute for Nuclear Physics

Jun 2013 - Jul 2013 **Lawrence Berkeley National Laboratory**, CA, USA
Nuclear Science Division

Aug 2012 **Deutsches Elektronen-Synchrotron Zeuthen**, Germany
Astroparticle Physics Division

Teaching

Jan 2024 - present **University of Utah**, Salt Lake City, UT, USA
“*The Universe*” (ASTR/PHYS-1060)

Oct 2022 - Mar 2023 **Karlsruhe Institute of Technology**, Karlsruhe, Germany
“*Physics for Computing Scientists II*”

Apr 2022 - Aug 2023 “*Physics for Computing Scientists I*”

Jun 2020 - Jul 2020 **University of Delaware**, Newark, DE, USA
“*Introductory Physics I*” (PHYS-201)

Summer Schools

Jan 2023 - Feb 2023 “*Astroparticle Physics*”, 4th Graduate School on Plasma-Astroparticle Physics, Bad Honnef, Germany

Jun 2021 - Jul 2021 “*Air Shower Physics*”, IceCube Summer School, University of Delaware, Newark, DE, USA

Outreach

May 2023 - Sep 2023 **KIT Internship**, Karlsruhe Institute of Technology, Germany
Lecturing and lab courses for high school students

Aug 2022 **Code of the Universe**, Karlsruhe Institute of Technology, Germany
Assistant IceCube science exhibition, lecturing

May 2019 **World Science Festival 2019**, New York University, NY, USA
Assistant IceCube science exhibition

Apr 2019 **IceCube Masterclass 2019**, University of Delaware, DE, USA
Local event organization/coordination, lecturing

Apr 2018 **IceCube Masterclass 2018**, University of Delaware, DE, USA
Local event organization/coordination, lecturing

May 2013 **Highlights der Physik 2013**, University of Wuppertal, Germany
Assistant astroparticle physics exhibition

Students Supervised

- Summary: As thesis advisor: 2 PhD
As co-supervisor: 4 PhD (2 completed), 2 BSc (2 completed)
- Dec 2023 - present **Antonin Kravka**, *University of Utah*, UT, USA
PhD student. Research topic: “*Measurement of the muon production depth in extensive air showers with IceTop*”.
- Dec 2023 - present **Lincoln Draper**, *University of Utah*, UT, USA
PhD student. Research topic: “*Measurement of the lateral distribution function of muons in IceCube and IceTop*”.
- Jul 2022 - Sep 2023 **Mark Weyrauch**, *Karlsruhe Institute of Technology*, Germany
PhD student (co-supervision). Research topic: “*A two-component lateral distribution function for the reconstruction of air-shower events in IceTop*”.
- Jul 2020 - Jun 2022 **Moureen Binte Amin**, *University of Delaware*, DE, USA
PhD student (co-supervision). Research topic: “*Development of an IceTop veto for astrophysical neutrino searches in IceCube*”.
- May 2020 - May 2022 **Logan Molchany**, *University of Delaware*, DE, USA
BSc student (co-supervision). Research project: “*Simulation studies of extensive air showers*”. Graduated in May 2022.
- Jun 2018 - May 2019 **Andrew Crossman**, *University of Delaware*, DE, USA
BSc student (co-supervision). Research project: “*Precision of analytical approximations in calculations of atmospheric leptons*”. Graduated in May 2019.
- May 2017 - May 2019 **Ramesh Koirala**, *University of Delaware*, DE, USA
PhD student (co-supervision). PhD thesis: “*Extension of the IceTop energy spectrum to 250 TeV and application of the constant intensity cut method to IceTop data*”. Graduated in May 2019.
- May 2017 - Feb 2019 **Hershal Pandya**, *University of Delaware*, DE, USA
PhD student (co-supervision). PhD thesis: “*Search for PeV gamma rays and astrophysical neutrinos with IceTop and IceCube*”. Graduated in Feb. 2019.

Honors and Awards

- 2021 **Bruno Rossi Prize**, as an IceCube member
Jul 2020 - Jun 2022 **YIGPrepPro Fellowship**, Karlsruhe Institute of Technology

Presentations

- Summary: Invited Conference Talks: 11
Contributed Conference Talks: 10
Invited Colloquia & Seminar Talks: 11
(presentations at national conferences and workshops excluded)
- List of Presentations In the following, all presentations are listed in chronological order. Invited talks, contributed talks, and invited colloquia & seminar talks are listed separately. Presentations at national conferences and workshops are excluded.

Invited Conference Talks:

- Jan 2024 **Workshop on the Tuning of Hadronic Interaction Models**, Wuppertal, Germany
“IceTop Observables for the Tuning of Hadronic Interaction Models”
- Sep 2023 **FPF Theory Workshop at CERN**, Geneva, Switzerland
“Light Hadron Production at the FPF”
- Sep 2022 **Roma International Conference on Astroparticle Physics 2022**, Rome, Italy
“Probing High-Energy Hadronic Interactions with Cosmic Rays”
- Aug 2022 **TeV Particle Astrophysics 2022**, Kingston, ON, Canada
“Astroparticle Physics with the Forward Physics Facility at the HL-LHC”
- Jul 2022 **Global Cosmic Ray Observatory Workshop 2022**, Wuppertal, Germany
“Particle Physics with GCOS”
- May 2022 **21st International Symposium on Very High Energy Cosmic Ray Interactions**, Virtual
“Recent Results from IceTop”
- Jun 2021 **3rd International Symposium on Cosmic Rays and Astrophysics 2021**, Virtual
“Recent Results of Cosmic Ray Measurements from the IceCube Neutrino Observatory”
- May 2021 **Global Cosmic Ray Observatory Workshop 2021**, Virtual
“Tests of Hadronic Interaction Models with TeV-PeV Muons in IceCube”
- Nov 2020 **1st Forward Physics Facility Kickoff Meeting at CERN**, Virtual
“Muon and Neutrino Fluxes in IceCube”
- Jul 2019 **36th International Cosmic Ray Conference**, Madison, WI, USA
“Recent Results of Cosmic Ray Measurements from IceCube and IceTop”
- Apr 2013 **Exotic Physics with Neutrino Telescopes 2013**, Marseille, France
“Direct detection of supersymmetric particles in IceCube”

Contributed Conference Talks:

- Jul 2023 **38th International Cosmic Ray Conference**, Nagoya, Japan
“Astroparticle Physics with the Forward Physics Facility at the High-Luminosity LHC”
- Oct 2022 **Ultra High Energy Cosmic Rays 2022**, L’Aquila, Italy
“Report on the Combined Analysis of Muon Data Recorded by Nine Air Shower Experiments”
- Aug 2022 **TeV Particle Astrophysics 2022**, Kingston, ON, Canada
“The Surface Array Enhancement of the IceCube Neutrino Observatory”
- Jul 2021 **37th International Cosmic Ray Conference**, Virtual
“Density of GeV Muons Measured with IceTop”

- Jul 2021 **37th International Cosmic Ray Conference**, Virtual
“Update on the Combined Analysis of Muon Measurements from Nine Air Shower Experiments”
- Oct 2018 **Ultra High Energy Cosmic Rays 2018**, Paris, France
“Atmospheric Muons Measured with IceCube”
- May 2018 **20th International Symposium on Very High Energy Cosmic Ray Interactions 2018**, Nagoya, Japan
“Atmospheric Muons Measured with IceCube”
- Jun 2015 **34th International Cosmic Ray Conference**, The Hague, Netherlands
“High p_T Muons from Cosmic Ray Air Showers in IceCube”
- Aug 2014 **18th International Symposium on Very High Energy Cosmic Ray Interactions 2014**, Geneva, Swiss
“Composition from High p_T Muons in IceCube”
- May 2013 **33rd International Cosmic Ray Conference**, Rio de Janeiro, Brasil
“Exotic signatures from physics beyond the Standard Model in IceCube - Signal and background simulations”

Invited Colloquia & Seminar Talks

- Apr 2023 **Physics Seminar**, Dortmund University
 Department of Physics, Dortmund, Germany
“Probing Hadronic Interactions in Extensive Air Showers with the IceCube Neutrino Observatory”
- Apr 2023 **Physics Seminar**, Ghent University
 Department of Physics & Astronomy, Ghent, Belgium
“Cosmic Ray Measurements with the IceCube Neutrino Observatory”
- Feb 2023 **High Energy and Astrophysics Colloquium**, University of Utah
 Department of Physics & Astronomy, Salt Lake City, UT, USA
“Measurements of Extensive Air Showers with IceCube in the Multi-Messenger Era”
- Feb 2023 **Nikhef Colloquium**, Radboud University
 Nikhef, Nijmegen, Netherlands
“Probing Hadronic Interactions with Air Showers at the IceCube Neutrino Observatory”
- Dec 2022 **High-Energy Physics Seminar**, Karlsruhe Institute of Technology
 Institute for Experimental Particle Physics, Karlsruhe, Germany
“Light Hadron Production at the Forward Physics Facility at the LHC”
- Sep 2022 **Physics and Astronomy Colloquium**, University of Iowa
 Department of Physics, Iowa City, IA, USA
“Cosmic Rays and Particle Physics with IceCube”
- Apr 2022 **High-Energy Physics Seminar**, Academia Sinica
 Institute of Physics, Taipei, Taiwan (virtual)
“Air Shower Physics with IceCube”

- Feb 2022 **Astroparticle Seminar**, *University of Delaware*
Department of Physics & Astronomy, Newark, DE, USA
“Muon Measurements with IceCube”
- Feb 2022 **Physics Colloquium**, *University of Delaware*
Department of Physics & Astronomy, Newark, DE, USA
“The Intersection between Cosmic Rays and Particle Physics with IceCube”
- Sep 2019 **Astroparticle Seminar**, *Karlsruhe Institute of Technology*
Institute for Astroparticle Physics, Karlsruhe, Germany
“Recent Results of Cosmic Ray Measurements from IceCube and IceTop”
- Oct 2018 **Astroparticle Seminar**, *Karlsruhe Institute of Technology*
Institute for Astroparticle Physics, Karlsruhe, Germany
“Atmospheric Muons Measured with IceCube”

Publications

- Total Number 173 peer-reviewed publications in major international journals
(394 total citable publications)
- Citations More than ~ 26300 (~ 29600) citations,
accounting to ~ 152 (~ 75) citations per paper
- iNSPIRE-HEP <http://inspirehep.net/authors/1284409>
- H-Index[Ⓢ] Current H-index of 73 (76)
- List of Publications In the following, all publications are listed in chronological order and those as corresponding author or with significant contributions, publications during the IceCube Cosmic Ray Working Group tenure, and collaborative publications are listed separately.

Corresponding Author or Significant Contributions:

(peer-reviewed journal publications, conference proceedings, and others)

2024

- [1] S. Verpoest, D. Soldin, P. Desiati, “*Atmospheric muons and their variations with temperature*”, Submitted to *Astropart. Phys.* (Nov 2023)
- [2] D. Soldin, P. A. Evenson, H. Kolanoski, A. A. Watson, “*Cosmic-Ray Physics at the South Pole*”, Submitted to *Astropart. Phys.* (Nov 2023), arXiv:2311.14474

2023

- [3] D. Soldin, “*Astroparticle Physics with the Forward Physics Facility at the High-Luminosity LHC*”, PoS(ICRC2023)327 (2023), arXiv:2308.09079
- [4] M. Weyrauch, D. Soldin (for the IceCube Collaboration), “*A Two-Component Lateral Distribution Function for the Reconstruction of Air-Shower Events in IceTop*”, PoS(ICRC2023)357 (2023), arXiv:2309.00741

- [5] F. G. Schröder, A. Coleman, J. Eser, E. Mayotte, F. Sarazin, D. Soldin, T. M. Venters, “*Snowmass UHECR Whitepaper: Requirements on Future Instrumentation*”, PoS(ICRC2023)206 (2023)
- [6] F. Sarazin, A. Coleman, J. Eser, E. Mayotte, F. G. Schröder, D. Soldin, T. M. Venters, “*Ultra-High-Energy Cosmic-Rays (UHECR): at the Intersection of the Cosmic and Energy Frontiers – Overview of the Snowmass UHECR white paper and roadmap*”, PoS(ICRC2023)265 (2023)
- [7] A. Coleman, A. Leszczynska, M. Plum, D. Soldin (for the IceCube Collaboration), “*A multi-detector EAS reconstruction framework for IceCube*”, PoS(ICRC2023)366 (2023)
- [8] D. Soldin (for the IceCube Collaboration), “*Cosmic Ray Measurements with IceCube and IceTop*”, SciPost Phys.Proc.13 (2023) 002, arXiv:2208.01911
- [9] F. G. Schröder, A. Coleman, J. Eser, E. Mayotte, F. Sarazin, D. Soldin, T. M. Venters, “*The Snowmass UHECR White Paper on Ultra-High-Energy Cosmic Rays*”, EPJ Web Conf. 283 (2023) 01001
- [10] D. Soldin, “*Probing Hadronic Interactions with Cosmic Rays*”, EPJ Web Conf. 280 (2023) 04003, arXiv:2302.07111
- [11] J. L. Feng, F. Kling, M. H. Reno, J. Rojo, D. Soldin, et al., “*The Forward Physics Facility at the High-Luminosity LHC*”, White Paper for Snowmass 2021, J. Phys. G 50 (2023) 3, 030501, arXiv:2203.05090
- [12] A. Coleman, J. Eser, E. Mayotte, F. Sarazin, F. G. Schröder, D. Soldin, T. Venters, et al., “*Ultra-High Energy Cosmic Rays: The Intersection of the Cosmic and Energy Frontiers*”, White Paper for Snowmass 2021, Astropart. Phys. 149 (2023) 1028194, arXiv:2205.05845

2022

- [13] IceCube Collaboration, “*Density of GeV Muons in Air Showers Measured with IceTop*”, Phys. Rev. D106 (2022), 032010, arXiv:2201.12635
- [14] J. M. Campbell, et al., “*Event Generators for High-Energy Physics Experiments*”, White Paper for Snowmass 2021, DESY-22-042 (2022), arXiv:2203.11110
- [15] J. Albrecht, L. Cazon, H. P. Dembinski, A. Fedynitch, K.-H. Kampert, T. Pierog, W. Rhode, D. Soldin, B. Spaan, R. M. Ulrich, M. Unger, “*The Muon Puzzle in cosmic-ray induced air showers and its connection to the Large Hadron Collider*”, Astrophys. Space Sci. 367 (2022) 27, arXiv:2105.06148
- [16] L. A. Anchordoqui, et al., “*The Forward Physics Facility: Sites, Experiments, and Physics Potential*”, Phys. Rep. 968 (2022) 1-50, arXiv:2109.10905

2021

- [17] H. P. Dembinski, J. Albrecht, L. Cazon, A. Fedynitch, K.-H. Kampert, T. Pierog, W. Rhode, D. Soldin, B. Spaan, R. M. Ulrich, M. Unger, “*The Muon Puzzle in air showers and its connection to the LHC*”, PoS(ICRC2021)037 (2021)
- [18] F. Gesualdi, H. P. Dembinski, K. Shinozaki, D. Supanitsky, T. Pierog, L. Cazon, D. Soldin, R. Conceição, “*On the muon scale of air showers and its application to the AGASA data*”, PoS(ICRC2021)473 (2021), arXiv:2108.04824
- [19] D. Soldin (for the EAS-MSU, IceCube, KASCADE-Grande, NEVOD-DECOR, Pierre Auger, SUGAR, Telescope Array, and Yakutsk EAS Array Collaborations), “*Update on the Combined Analysis of Muon Measurements from Nine Air Shower Experiments*”, PoS(ICRC2021)349 (2021), arXiv:2108.08341
- [20] D. Soldin (for the IceCube Collaboration), “*Density of GeV Muons Measured with IceTop*”, PoS(ICRC2021)342 (2021), arXiv:2107.09583
- [21] S. Verpoest, D. Soldin, S. De Ridder (for the IceCube Collaboration), “*Testing Hadronic Interaction Models with Cosmic Ray Measurements at the IceCube Neutrino Observatory*”, PoS(ICRC2021)357 (2021), arXiv:2107.09387

2020

- [22] D. Soldin, H. P. Dembinski, L. Cazon, T. Pierog, et al., “*Studies of the Muon Excess in Cosmic Ray Air Showers*”, Letter of Interest for Snowmass 2021 (2020), LoI CR07-083

2019

- [23] D. Soldin (for the IceCube Collaboration), “*Recent Results of Cosmic Ray Measurements from IceCube and IceTop*”, PoS(ICRC2019)014 (2019), arXiv:1909.04423
- [24] S. Tilav, T. K. Gaisser, D. Soldin, P. Desiati (for the IceCube Collaboration), “*Seasonal variation of atmospheric muons in IceCube*”, PoS(ICRC2019)894 (2019), arXiv:1909.01406
- [25] T. K. Gaisser, D. Soldin, A. Crossman, A. Fedynitch, “*Precision of analytical approximations in calculations of Atmospheric Leptons*”, PoS(ICRC2019)893 (2019), arXiv:1910.08676
- [26] X. Bai, E. Dvorak, D. Soldin, J. Gonzalez (for the IceCube Collaboration), “*A Three-dimensional Reconstruction of Cosmic Ray Events in IceCube*”, PoS(ICRC2019)244 (2019), arXiv:1908.07582

- [27] F. G. Schröder, T. AbuZayyad, L. A. Anchordoqui, K. Andeen, X. Bai, S. BenZvi, D. Bergman, A. Coleman, H. Dembinski, M. DuVernois, T. K. Gaisser, F. Halzen, A. Haungs, J. Kelley, H. Kolanoski, F. McNally, M. Roth, F. Sarazin, D. Seckel, R. Smida, D. Soldin, D. Tosi, “*High-Energy Galactic Cosmic Rays*”, Science White Paper for the Astronomy and Astrophysics Decadal Survey (Astro2020), arXiv:1903.07713
- [28] H. P. Dembinski, J. C. Arteaga-Velázquez, L. Cazon, R. Conceição, J. Gonzalez, Y. Itow, D. Ivanov, N. N. Kalmykov, I. Karpikov, S. Müller, T. Pierog, F. Riehn, M. Roth, T. Sako, D. Soldin, R. Takeishi, G. Thompson, S. Troitsky, I. Yashin, E. Zadeba, Y. Zhezher, “*Report on Tests and Measurements of Hadronic Interaction Properties with Air Showers*”, EPJ Web Conf. 210 (2019) 02004, arXiv:1902.08124
- [29] D. Soldin (for the IceCube Collaboration), “*Atmospheric Muons Measured with IceCube*”, EPJ Web Conf. 208 (2019) 08007, arXiv:1811.03651

2017

- [30] D. Soldin, “*Laterally Separated Muons from Cosmic Ray Air Showers Measured with the IceCube Neutrino Observatory*”, Dissertation (2017), urn:nbn:de:hbz:468-20180910-115302-5

2015

- [31] D. Soldin (for the IceCube Collaboration), “*High p_T muons from cosmic ray air showers in IceCube*”, PoS(ICRC2015)256 (2015), arXiv:1510.05225
- [32] D. Soldin (for the IceCube Collaboration), “*Composition from high p_T muons in IceCube*”, EPJ Web Conf. 99 (2015) 06001, arXiv:1411.4448

2013

- [33] D. Soldin, L. Gerhardt, K. Helbing, S. R. Klein, S. Kopper, D. van der Drift (for the IceCube Collaboration), “*Exotic signatures from physics beyond the Standard Model in IceCube - Signal and background simulations*”, 33rd International Cosmic Ray Conference, Rio de Janeiro 2013 (2013) 29-31, arXiv:1309.7007

Publications During IceCube Working Group Tenure:

(only peer-reviewed journal publications)

2023

- [34] IceCube Collaboration, “*Observation of Seasonal Variations of the Flux of High-Energy Atmospheric Neutrinos with IceCube*”, submitted to Eur. Phys. J. C (2023)

2022

- [35] IceCube Collaboration, “*Framework and tools for the simulation and analysis of the radio emission from air showers at IceCube*”, JINST 17 (2022) 06, P06026

2021

- [36] IceCube Collaboration, “*Measurements of the time-dependent cosmic-ray Sun shadow with seven years of IceCube data: Comparison with the Solar cycle and magnetic field models*”, Phys. Rev. D103 (2021) 4, 042005

2020

- [37] IceCube Collaboration, “*Cosmic ray spectrum from 250 TeV to 10 PeV using IceTop*”, Phys. Rev. D102 (2020) 122001
- [38] IceCube Collaboration, “*Design and Performance of the first IceAct Demonstrator at the South Pole*”, JINST 15 (2020) no.02, T02002

2019

- [39] IceCube Collaboration, “*Search for PeV Gamma-Ray Emission from the Southern Hemisphere with 5 Years of Data from the IceCube Observatory*”, Astrophys. J. 891 (2019) 9
- [40] IceCube Collaboration, “*Cosmic ray spectrum and composition from PeV to EeV using 3 years of data from IceTop and IceCube*”, Phys. Rev. D100 (2019) no.8, 082002
- [41] HAWC and IceCube Collaborations, “*All-Sky Measurement of the Anisotropy of Cosmic Rays at 10 TeV and Mapping of the Local Interstellar Magnetic Field*”, Astrophys. J. 871 (2019) no.1, 96
- [42] IceCube Collaboration, “*Detection of the Temporal Variation of the Sun’s Cosmic Ray Shadow with the IceCube Detector*”, Astrophys. J. 872 (2019) no.2, 133

Other Collaborative Publications:

(only peer-reviewed journal publications)

2024

- [43] IceCube Collaboration, “*In situ estimation of ice crystal properties at the South Pole using LED calibration data from the IceCube Neutrino Observatory*”, The Cryosphere 18 (2024) 1, 75-102
- [44] IceCube Collaboration, “*Search for Galactic Core-collapse Supernovae in a Decade of Data Taken with the IceCube Neutrino Observatory*”, Astrophys. J. 961 (2024) 1, 84

2023

- [45] IceCube Collaboration, “*Search for Extended Sources of Neutrino Emission in the Galactic Plane with IceCube*”, *Astrophys. J.* 956 (2023) 1, 20
- [46] IceCube Collaboration, “*Observation of high-energy neutrinos from the Galactic plane*”, *Science* 380 (2023) 6652
- [47] IceCube Collaboration, “*Search for Correlations of High-energy Neutrinos Detected in IceCube with Radio-bright AGN and Gamma-Ray Emission from Blazars*”, *Astrophys. J.* 954 (2023) 1, 75
- [48] IceCube Collaboration, “*Measurement of atmospheric neutrino mixing with improved IceCube DeepCore calibration and data processing*”, *Phys. Rev. D.* 108 (2023) 1, 012014
- [49] IceCube Collaboration, “*IceCat-1: The IceCube Event Catalog of Alert Tracks*”, *Astrophys. J. Suppl.* 269 (2023) 1, 25
- [50] IceCube Collaboration, “*A Search for IceCube Sub-TeV Neutrinos Correlated with Gravitational-wave Events Detected By LIGO/Virgo*”, *Astrophys. J.* 959 (2023) 2, 96
- [51] IceCube Collaboration, “*Search for neutrino lines from dark matter annihilation and decay with IceCube*”, *Phys. Rev. D* 108 (2023) 10, 102004
- [52] IceCube Collaboration, “*Observation of seasonal variations of the flux of high-energy atmospheric neutrinos with IceCube*”, *Eur. Phys. J. C* 83 (2023) 9, 777
- [53] IceCube Collaboration, “*Constraining High-energy Neutrino Emission from Supernovae with IceCube*”, *Astrophys. J. Lett.* 949 (2023) 1, L12
- [54] IceCube Collaboration, “*D-Egg: a dual PMT optical module for IceCube*”, *JINST* 18 (2023) 04, P04014
- [55] IceCube Collaboration, “*Limits on Neutrino Emission from GRB 221009A from MeV to PeV Using the IceCube Neutrino Observatory*”, *Astrophys. J. Lett.* 949 (2023) 1, L26
- [56] IceCube Collaboration, “*Constraints on Populations of Neutrino Sources from Searches in the Directions of IceCube Neutrino Alerts*”, *Astrophys. J.* 951 (2023) 1, 45
- [57] IceCube Collaboration, “*A Search for Coincident Neutrino Emission from Fast Radio Bursts with Seven Years of IceCube Cascade Events*”, *Astrophys. J.* 946 (2023) 2, 80
- [58] IceCube Collaboration, “*Searches for Neutrinos from Large High Altitude Air Shower Observatory Ultra-high-energy γ -Ray Sources Using the IceCube Neutrino Observatory*”, *Astrophys. J. Lett.* 945 (2023) 1, L8
- [59] IceCube Collaboration, “*IceCube Search for Neutrinos Coincident with Gravitational Wave Events from LIGO/Virgo Run O3*”, *Astrophys. J.* 944 (2023) 1, 80

2022

- [60] IceCube Collaboration, “*Evidence for neutrino emission from the nearby active galaxy NGC 1068*”, *Science* 378 (2022) 6619, 538-543
- [61] IceCube Collaboration, “*Graph Neural Networks for low-energy event classification & reconstruction in IceCube*”, *JINST* 17 (2022) 11, P11003
- [62] IceCube Collaboration, “*Search for Astrophysical Neutrinos from 1FLE Blazars with IceCube*”, *Astrophys. J.* 938 (2022) 1, 38
- [63] IceCube Collaboration, “*Searching for High-energy Neutrino Emission from Galaxy Clusters with IceCube*”, *Astrophys. J. Lett.* 938 (2022) 2, L11
- [64] IceCube Collaboration, “*Searches for Neutrinos from Gamma-Ray Bursts Using the IceCube Neutrino Observatory*”, *Astrophys. J.* 939 (2022) 2, 116
- [65] IceCube Collaboration, “*Search for Unstable Sterile Neutrinos with the IceCube Neutrino Observatory*”, *Phys. Rev. Lett.* 129 (2022) 15, 151801
- [66] IceCube Collaboration, “*Low energy event reconstruction in IceCube DeepCore*”, *Eur. Phys. J. C* 82 (2022) 9, 807
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