

Reina Maruyama

Curriculum Vitae

January 2020

Address: Department of Physics
Yale University, WL 217
P.O. Box 208120
New Haven, CT 06520-8120, U.S.A.
Phone: +1.203.432.3362
Email: reina.maruyama@yale.edu
website: <http://maruyama-lab.yale.edu>

Professional Appointments

July 2016 – **Associate Professor of Physics with Tenure**
Yale University
July 2013 – June 2016 **Assistant Professor of Physics**
Yale University
2013 **Associate Professor of Physics with Tenure**
University of Wisconsin-Madison
2011 – 2013 **Assistant Professor of Physics**
University of Wisconsin-Madison
2006 – 2010 **Assistant Scientist**, IceCube Research Center
University of Wisconsin-Madison
2003 – 2006 **Chancellor's Postdoctoral Fellow, Postdoctoral Research Associate**
University of California & Lawrence Berkeley National Laboratory
1996 – 2003 **Graduate Research Assistant**
Department of Physics, University of Washington, Seattle

Education

2003 Ph.D. Physics University of Washington, Seattle, WA, USA
"Optical Trapping of Ytterbium Atoms,"
Thesis Advisor: E. Norval Fortson
1996 M.S. Physics University of Washington, Seattle, WA, USA
1995 B.S. Applied Physics Columbia University, New York, NY, USA

Honors and Awards

- Yale Junior Faculty Fellowship, 2015 – 2016
- Sloan Research Fellow, 2014 – 2016
- NSF CAREER Award: 2012 – 2017
- Yale Public Voices Fellow, 2013 – 2014

- Woman Physicist of the Month, Committee on the Status of Women in Physics (CSWP) June 2013
- Chancellor's Postdoctoral Fellowship, University of California, Berkeley: 2003 – 2006

Current Research and Scientific Leadership Positions

The following are a quick summary of the research topics and leadership positions within the scientific collaborations that Maruyama is leading or involved in. For more information, please visit <http://maruyama-lab.yale.edu>.

- Deciphering the properties of dark matter
 - PI and Scientific co-Spokesperson for the COSINE-100 experiment (2015 – Present).
 - PI and Scientific Spokesperson for the DM-Ice experiment (2010 – Present).
 - Search for axion dark matter with the HAYSTAC pathfinder experiment and development of new photon detection schemes (2017 – Present).
 - Successfully installed the COSINE-100 dark matter experiment at the Yangyang Underground Laboratory in South Korea in 2016. Data taking to begin in Fall 2016.
 - Successfully deployed and demonstrated long-term operation of a direct detection dark matter detector 2500 m below the surface of the Antarctic ice at the South Pole. (2010 – Present)
 - DM-Ice phase-II detector in operation at Boulby Underground Laboratory in the U.K. since 2015.
 - Installed a DM-Ice test stand underground at Fermilab Minos Hall (2014 - 2015).
 - Led R&D program and successfully demonstrated reduction of the background-inducing impurities in sodium-iodide detectors by a factor of 20.
 - Initiated and currently coordinate an international consortium of NaI experiments.
- Searching for new laws of physics through studies of neutrino properties
 - One of the founding members of the CUORE experiment in the U.S.
 - CUORE Council Co-Chair (2015 - 2018).
 - Institutional representative on the CUORE Collaboration Council (2014 - Present).
 - CUORE Physics Board member (2013 – 2015).
 - * Led the 2015 CUORE-0 Physical Review Letters publication as a member of the CUORE Physics Board. Title: "Search for Neutrinoless Double-Beta Decay of ^{130}Te with CUORE-0" among other publications.
 - Muon tagger construction for CUORE.
 - Developed a precision doping technique for neutron transmutation-doped thermistors for the CUORE experiment.

- IceCube Supernova Working Group convenor (2009 - 2011). A sensitivity study of the mass hierarchy and collective oscillation of neutrinos from supernovae with the IceCube experiment.
- IceCube Digital Optical Module (DOM) testing lead (2008 - 2011) to coordinate the final acceptance test prior to shipment to the South Pole.
- A member of the IceCube construction and DOM deployment team at the South Pole (2009 - 2011).

Professional Activities

Reviews & Panels	DOE Basic Research Needs on Dark Matter Small Projects, 2018 DOE Office of High Energy Physics DOE Nuclear Physics DOE SBIR/STTR NSF Particle Astrophysics Canada CFI
Committee Member/Organizer	Snowmass 2013 Contributor to the Cosmic Frontier Working Group for a long-term planning exercise for the American Physical Society's Division of Particles and Fields
Journal Referee	European Physical Journal C (EPJC) Journal of Instrumentation (JINST) Journal of Cosmology and Astroparticle Physics (JCAP) Astroparticle Physics
Outreach Activities	Science on Saturdays at Yale and other public talks IceCube Outreach Programs 2008/09 QuarkNet Education Outreach, Lawrence Berkeley National Laboratory

Conference & Summer School Organization

11. Organizing Committee, Phystat-DM, Stockholm, Sweden, July 31 – August 2, 2019.
10. Chair, Organizing Committee, Franco Iachello Retirement Symposium, New Haven, Connecticut, October 5 – 6, 2018.
9. Organizing Committee, National Nuclear Physics Summer School (NNPSS 2018), New Haven, Connecticut, June 17 – 30, 2018.
8. Organizing Committee, 13th Conference on the Intersections of Particle and Nuclear Physics (CIPANP 2018), Palm Springs, California, May 28 – June 03, 2018.
7. International Advisory Committee Member, Identification of Dark Matter (IDM 2016), Sheffield, UK, July 18 – 22, 2016.

6. Convener, 2015 Fall Meeting of the APS Division of Nuclear Physics, Santa Fe, New Mexico, Oct. 28 – 31, 2015.
5. Workshop on Sodium-Iodide-Based Dark Matter Detectors, Low Radioactivity Techniques 2015 (LRT 2015), Seattle, Washington, March 17, 2015.
4. Organizing Committee, 12th Conference on the Intersections of Particle and Nuclear Physics (CIPANP 2015), Vail, Colorado, May 19 – 24, 2015.
3. Convener, 37th International Conference on High Energy Physics (ICHEP 2014), Valencia, Spain, Jul. 2 – 9, 2014.
2. International Advisory Committee Member, Identification of Dark Matter (IDM 2012), Chicago, Illinois, July 23 – 27, 2012.
1. Co-organizer, Neutrinos and Dark Matter (NDM09), Madison, Wisconsin, August 31 – September 4, 2009.

University and Department Service

2019 – 2020 *University Wide, Yale University*

- Advisory Committee on Library Policy
- Reviewer, Undergraduate Summer Research Fellowship Applications
- Goldwater selection committee

Physics Department, Yale University

- Faculty Search Committee

2018 – 2019 *University Wide, Yale University*

- Advisory Committee on Library Policy
- Reviewer, Undergraduate Summer Research Fellowship Applications

Physics Department, Yale University

- Director of Undergraduate Studies (Interim, Spring 2019)

2017 – 2018 *University Wide, Yale University*

- Senator, Faculty of Arts and Sciences Senate (Elected)
 - Executive Committee, member (elected)
 - Committee on Diversity and Inclusivity
 - Elections Committee
 - Committee on Yale College Expansion
- Advisory Committee for Diversity and Faculty Development in the Faculty of Arts and Sciences

- Reviewer, Undergraduate Summer Research Fellowship Applications

Physics Department, Yale University

- Committee on Climate and Diversity

2016 – 2017 *University Wide, Yale University*

- Senator, Faculty of Arts and Sciences Senate (Elected)
 - Executive Committee, member (elected)
 - Committee on Faculty Advancement
 - Committee on Diversity and Inclusivity
- Advisory Committee for Diversity and Faculty Development in the Faculty of Arts and Sciences
- Reviewer, Undergraduate Summer Research Fellowship Applications

Physics Department, Yale University

- Committee on Climate and Diversity

2015 – 2016 *University Wide, Yale University*

- Senator, Faculty of Arts and Sciences Senate (Elected)
- Reviewer, Undergraduate Summer Research Fellowship Applications

Physics Department, Yale University

- COUPE (Committee on Undergraduate Physics Education)
- Committee on Climate and Diversity

2014 – 2015 *Physics Department, Yale University*

- COUPE (Committee on Undergraduate Physics Education)
- Committee on Climate and Diversity

2012 – 2013 *Physics Department, University of Wisconsin-Madison*

- Admissions & Fellowships Committee
- Faculty Search Committee for Astrophysics
- Alumni Relations Committee
- Outreach & Museum Committee

University-Wide, University of Wisconsin-Madison

- Faculty Senate Representative

2011 – 2012 *Physics Department, University of Wisconsin-Madison*

- Alumni Relations Committee
- Outreach & Museum Committee

Teaching

- Spring 2020 *PHYS 205L and 206L: Modern Physical Measurement I & II, Yale University*
- Fall 2019 *PHYS 205L and 206L: Modern Physical Measurement I & II, Yale University*
- Spring 2019 *PHYS 382L: Advanced Labs, Yale University*
- Spring 2018 *PHYS 382L: Advanced Labs, Yale University*
- Spring 2017 *PHYS 382L: Advanced Labs, Yale University*
- Fall 2016 *PHYS 524: Introduction to Nuclear Physics , Yale University*
- Spring 2015 *PHYS 181-02: University Physics , Yale University*
PHYS 990-10: Special Investigations, Yale University
- Fall 2014 *PHYS 205L-01 & 206L-01 Modern Physical Measurement, Yale University*
- Summer 2014 *National Academies Summer Institute on Undergraduate Education at Yale*
- Spring 2014 *PHYS 181-01: University Physics, Yale University*
PHYS 990-15: Special Investigations, Yale University
- Fall 2013 *SCIE 198: Perspectives on Science and Engineering, Yale University*
- Spring 2013 *Advanced Laboratory (Physics 407), University of Wisconsin-Madison*
- Spring 2012 *Advanced Laboratory (Physics 407), University of Wisconsin-Madison*
- Summer 2011 *Workshop for New Physics and Astronomy Faculty by AAPT, AAS, and APS*
- Spring 2011 *General Physics II (Physics 407), University of Wisconsin-Madison*

Advising and Mentoring

Research Scientists

3. Sidney Cahn, 2018 –
2. James Nikkel, 2017 –
1. Ke Han, Oct. 2014 – Feb. 2016
Current Employment: Associate Professor, Department of Physics, Shanghai Jiao Tong University

Postdocs

5. Paranava Surukuchi, Feb. 2019 – Present
4. Danielle Speller, Feb. 2017 – Present
3. Jay Hyun Jo, Dec. 2015 – Present
2. Kyungeun Lim, Mar. 2013 – Jul. 2017
Current Employment: Data Analyst for Program and Content, NBC Universal
1. Matthew Kauer, 2012 – 2015
Current Employment: Research Scientist, University of Wisconsin-Madison

Graduate Students: PhD

*5 PhDs awarded to date. * indicates expected graduation date*

11. Samantha Pagan, PhD expected: 2024*, Yale University
Thesis: CUORE
10. Sumita Ghosh (Applied Physics), PhD expected: 2022*, Yale University
Thesis: Development of Rydberg Photon Detection for Axion Searches
9. Kelly Backes, PhD expected: 2021*, Yale University (co-advisor)
Thesis: HAYSTAC
8. William Thompson, PhD expected: 2021*, Yale University, NSF Graduate Research Fellow
Thesis: DM-Ice
7. Estella Barbosa de Souza, PhD expected: 2020*, Yale University
Thesis: DM-Ice
Co-chair, Yale Physics Professional Development Organization
6. Christopher Davis, PhD expected: 2019*, Yale University
Thesis: First Measurement of Two-Neutrino Double Beta Decay with CUORE
5. Jeremy Cushman, PhD, Dec. 2017 Yale University (co-advisor)
Thesis: A Search for Neutrinoless Double-Beta Decay in Tellurium-130 with CUORE
Current employment: Software Algorithm Developer for self driving cars, Optimus Ride, Boston, MA
4. Antonia Hubbard, PhD, Jun. 2015, University of Wisconsin-Madison
Thesis: Muon-Induced Backgrounds in the DM-Ice17 NaI(Tl) Dark Matter Detector
NSF Graduate Research Fellow
Current employment: Postdoc, Northwestern University
3. Walter Pettus, PhD, Jun. 2015, University of Wisconsin-Madison (co-advisor)
Thesis: Cosmogenic Activation in NaI Detectors for Dark Matter Searches.
DOE NNSA SSGF Fellow
Current employment: Postdoc, Yale
2. Benedikt Riedel, PhD, Oct. 2014, University of Wisconsin-Madison
Thesis: Modeling and Understanding Supernova Signals in the IceCube Neutrino Observatory
Current employment: Scientific Computing Specialist, University of Chicago
1. Bethany Reilly, PhD, Aug. 2014, University of Wisconsin-Madison
Thesis: Background Simulation and Verification for DM-Ice
Current employment: Associate Lecturer of Physics and Astronomy, UW-Fox Valley

Graduate Students: Masters

2. Lauren Wielgus, Jul. 2012 – Sep. 2013, University of Wisconsin-Madison
Detector Calibration Control System for CUORE.
1. Zachary Pierpoint, Jul. 2011 - Dec. 2015, University of Wisconsin-Madison
Thesis: Search for Annual Modulation Signature from Dark Matter with DM-Ice17

Undergraduate Students

**expected degree award date*

19. Caitlin Gainey, Sept. 2019 – May 2023*
Project: CUORE and CUPID, muon tagger
18. Huaijin (Jean) Wang, Jan. 2019 – May 2022*
Project: Data Acquisition System for HAYSTAC
17. Andrew Zheng, Jan. 2019 – May 2022*
Project: Measurement of Nuclear Recoil Quenching Factor in NaI(Tl)
16. Gabe Hoshino, Sep. 2018 – May 2021*
Project: Single Photon Detection with Rydberg Atoms
15. Daniel Heimsoth, Sep. 2018 – May 2020*
Project: Pulse Shape Discrimination in Sodium Iodide Detectors
14. Elizabeth (Liz) Ruddy, Sep. 2018 – May 2020*
Project: Annual Modulation in Sodium Iodide Detectors
13. Cady van Assendelft, Jun. 2018 – May 2019
Project: HAYSTAC Phase 2 Upgrade
Currently in Physics PhD Program at Stanford
12. Katherine Melbourne, Jun. 2017 – Dec 2019*
Project: Simulation for CUORE
11. Byron Daniel, Jun. 2016 – May 2019
Project: Simulation of the CUORE Detector Calibration System
 - STARS-II Fellow, 2018
 - MIT Summer Research Program (MSRP), 2017
 - STARS-I and Summer Research Fellow, 2016
 - Currently in Physics PhD program at Carnegie Mellon
10. Suryabrata Dutta, Tetelman Fellow, 2016, Jun. 2016 – May 2018, B.S. May 2018
Projects: CUORE onsite detector installation, calibration system
Accepted, differed, and declined Physics PhD Program @ UC Berkeley

9. Lauren Chambers, Edward A. Bouchet-Robertson Fellow, Sep. 2015 – May 2017, B.S. May 2017
Project: Characterization of Sodium-Iodide Detectors
 - Currently at Space Telescope Science Institute as a Research and Instrumentation Analyst
8. Ivy Wanta, Jan. 2015 – May 2017, B.S. 2017
Project: Development of a muon veto system for improved double beta decay measurements in ^{130}Te
7. Nikita Dutta, STARS II Fellow, Jan. 2015 - May 2016j, May 2016
Senior Thesis: *Development of muon veto system for improved double beta decay measurements in ^{130}Te*
 - Currently at Princeton for PhD in Mechanical Engineering.
 - 2017 NSF Graduate Research Fellow Honorable Mention
6. Field Rogers, Sep. 2014 – May 2015, B.S. 2015 (Post Bach through May 2016)
Senior Thesis: *Pulse-shape discrimination in NaI detectors*
 - Currently at MIT for PhD in Physics.
 - 2017 NSF Graduate Research Fellow
5. Tomas Albergo, Jan. 2015 – May 2015
Project: Optimization of the CUORE Calibration System with Monte Carlo Simulations
4. Chris Hilgenberg, Sep. 2011 – 2013
Project: Effect of temperature on NaI pulse shape
 - Recipient of the 2012-2013 Wisconsin Space Grant Consortium Undergraduate Research Award
 - Currently in Physics PhD program at Colorado State
3. Aleks Cianciara, Sep. 2011 – 2013
Project: DM-Ice17 detector stability
2. Minghui (Maggie) Wu, Jan. – Jun. 2013
Project: Background estimates for DM-Ice
1. Benjamin Broerman (co-advisor), Jun. 2010 – 2012
Project: Modeling of the thermal mass and gradient profile of the DM-Ice prototype, PMT characterization, waveform characterization, detector stability
 - Recipient of the 2011 UW Hilldale Research Fellowship.
 - Currently in Physics PhD program at Queens University, Canada

Plenary and Invited Talks at Conferences and Workshops

35. "Review: Direct Detection of Dark Matter" Uppsala Workshop on Particle Physics with Neutrino Telescopes (PPNT19), Uppsala, Sweden. Oct. 7 – 9, 2019.
34. "Neutrinoless Double Beta Decay, a Review" SLAC Summer School, Palo Alto, CA. Aug. 12 – 23, 2019.
33. "Recent results from COSINE-100" 54th Rencontres de Moriond, Electroweak Interactions and Unified Theories, La Thuile, Aosta Valley, Italy, Mar. 16 – 23, 2019.
32. "Double Beta Decay and Neutrino Physics" Plenary Lecture for Conference Experience for Undergraduate Students, 5th Joint Meeting of the APS Division of Nuclear Physics and the Physical Society of Japan, Waikoloa, HI, October 23 – 27, 2018.
31. "Testing DAMA/LIBRA with COSINE-100," Pacific 2018.9, U.C. Berkeley Richard B. Gump South Pacific Research Station, Moorea, French Polynesia, Aug. 31 – Sep. 04, 2018.
30. "COSINE-100 and tests of DAMA" CIPANP 2018, 13th Conference on the Intersections of Particle and Nuclear Physics, Palm Springs, CA, May 28 – June 3, 2018.
29. "COSINE-100" UCLA Dark Matter Conference 2018, UCLA, Los Angeles, CA. Feb. 21 – 23, 2018 (Plenary).
28. "Lectures on Neutrinoless Double Beta Decay" TRISEP2017, SNOLAB Summer School, Sudbury, ON, Canada. July 10 – 21, 2017.
27. "Neutrinoless Double Beta Decay" Institute for Nuclear Theory, Double Beta Decay Workshop, University of Washington, Seattle, WA, June 13 – 16, 2017.
26. "COSINE Experiment" Lake Louise Winter Institute 2017, Lake Louise, Canada. Feb. 19 – 25, 2017 (Plenary).
25. "Testing DAMA with COSINE-100" Miami 2016, Fort Lauderdale, FL. Dec. 14 – 20, 2016 (Plenary).
24. "Status and prospect for NaI dark matter experiments" 38th International Conference on High Energy Physics (ICHEP 2016), Chicago, IL. Aug. 3 – 10, 2016 (IBS Satellite Session).
23. "DM-Ice," UCLA Dark Matter 2016, Sources and Detection of Dark Matter and Dark Energy in the Universe, UCLA, Los Angeles, CA. Feb. 17 – 19, 2016 (Plenary).
22. "First Data from DM-Ice17, Prospects for DM-Ice," Mini-Workshop on direct search of dark matter, Institute for Basic Science, Daejeon, Korea. Jul. 7, 2015.
21. "Results from the search for neutrinoless double beta decay of ^{130}Te with CUORE-0, Status of CUORE," International Workshop on Baryon & Lepton Number Violation (BLV 2015), University of Massachusetts Amherst, Amherst, MA, Apr. 26 - 30, 2015.

20. "Results from CUORE-0, Status of CUORE," International Workshop on Double Beta Decay and Underground Science (DBD 2014) and the 4th Joint Meeting of the APS Division of Nuclear Physics and the Physical Society of Japan, Hawaii Island, USA, Oct. 5 - 7, 2014.
19. "Dark Matter Searches at the South Pole," Neutrinos Beyond IceCube, Arlington, VA, USA, Apr. 24, 2014 (Plenary).
18. "First Data from DM-Ice," Lake Louise Winter Institute, Lake Louise, Canada, Feb. 16 - 22, 2014 (Plenary).
17. "DM-Ice," Carolina International Symposium on Neutrino Physics 2013, Columbia, SC, May 20 - May 22, 2013 (Plenary).
16. "DM-Ice," Aspen Winter Workshop 2013 - Closing in on Dark Matter, Aspen Center for Physics, Aspen, CO, Jan. 28 - Feb. 3, 2013 (Plenary).
15. "DM-Ice," Dark Matter Silver Jubilee Symposium, PNNL, Richland, Washington, June 19-21, 2012 (Plenary).
14. "DM-Ice: DM Search with NaI," NDM12, Neutrinos and Dark Matter in Nuclear Physics 2012, Nara, Japan, June 11-15, 2012 (Plenary).
13. "Dark matter signatures and limits," CIPANP 2012, 11th Conference on the Intersections of Particle and Nuclear Physics, St. Petersburg, Florida, May 28-June 3, 2012 (Plenary).
12. "DM-Ice: a Search for Dark Matter at the South Pole," APS April Meeting, Atlanta, Georgia, March 31-April 3, 2012.
11. "On Testing DAMA," Unraveling Dark Matter, a workshop at Perimeter Institute, Waterloo, Canada, September 22-24, 2011 (Plenary).
10. "DM-Ice," Dark Matter Underground and in the Heavens, DMUH11, CERN, Switzerland, July 18-29, 2011 (Plenary).
9. "DM-Ice A Direct Dark Matter Search at the South Pole," Antarctic Science Symposium 2011, Madison, Wisconsin, April 27-28, 2011 (Plenary).
8. "DM-Ice: A Search for Dark Matter in the Antarctic Ice," Astrophysics from the South Pole: Status and Future Prospects, Washington, D.C., April 4-5, 2011 (Plenary).
7. "DM-Ice: A Search for Dark Matter in the Antarctic Ice," Indirect and Direct Detection of Dark Matter, Aspen Center for Physics, Aspen, Colorado, February 6-12, 2011 (Plenary).
6. "Supernova Neutrino Detection with IceCube," UCLA/UCSD Supernova Physics and DUSEL Workshop, UCLA, Los Angeles, CA, September 16-17, 2009 (Plenary).
5. "Neutrinoless Double Beta Decay," Gordon Research Conference in Nuclear Physics, Bryant University, Smithfield, Rhode Island, July 12-17, 2009 (Plenary).

4. "Probing the neutrino particle nature and mass scale with CUORICINO and CUORE," Workshop on Next generation Nucleon decay and Neutrino detectors 2006 (NNN06), Seattle, Washington, September 21-23, 2006 (Plenary).
3. "Cryogenic Double Beta Decay Experiments: CUORE and CUORICINO," Neutrino 2006, Santa Fe, New Mexico, June 13-19, 2006 (Plenary).
2. "Status of CUORICINO, Prospects for CUORE," Workshop on Exploring The Physics Frontier At The Deep Underground Laboratories, Institute for Nuclear Theory, University of Washington, Seattle, Washington, June 23-24, 2005.
1. "Prospects for an Atomic Clock Using the 1S_0 - 3P_0 Line in Atomic Yb," Second Workshop on Cold Alkaline-Earth Atoms, Copenhagen, Denmark, 2003.

Invited Seminars and Colloquia

34. Physics Colloquium, Physics Department, Stanford University, Jun. 4, 2019.
33. Physics Colloquium, Physics Department, University of Chicago, Jan. 10, 2019.
32. Physics Colloquium, Physics Department, Harvard University, Nov. 5, 2018.
31. Physics Colloquium, Physics Department, University of Rochester, May. 10, 2017.
30. Physics Seminar, Trinity College, Hartford, CT, Apr. 28, 2017.
29. Physics Colloquium, Physics Department, Columbia University, Mar. 27, 2017.
28. Physics Colloquium, Williams College, Apr. 8, 2016.
27. AstroParticle Physics Seminar, Sungkyunkwan University, South Korea, Apr. 6, 2016.
26. Physics Colloquium, University of Washington, Seattle, WA, Feb. 29, 2016.
25. Physics Club (Colloquium), Yale University, Dec. 14, 2015.
24. Physics Colloquium, Rensselaer Polytechnic Institute, Nov. 4, 2015.
23. Joint Stony Brook/Brookhaven Cosmology Seminar, Sep. 23, 2015.
22. Nuclear Particle Astrophysics Seminar, Wright Lab, Yale University, New Haven, CT, Apr. 16, 2015.
21. Physics Department/INFN Particle Physics Seminar, University of Rome "La Sapienza", Italy, May 12, 2014.
20. MIT Laboratory for Nuclear Science Lunch Time Seminar, Mar. 18, 2014.
19. Colloquium, Department of Physics, Drexel University, Dec. 5, 2013.
18. Weak Interactions Discussion Group at Yale, Yale University, Sep. 23, 2013.

17. Astroparticle Seminar, McGill University, Montreal, Canada, November 14, 2012.
16. High Energy Physics Seminar, Yale University, New Haven, Connecticut, September 5, 2012.
15. SLAC Astrophysics Colloquium, Kavli Institute for Particle Astrophysics and Cosmology, Stanford University, California, May 24, 2012.
14. KIPAC Friday Noon Seminar, University of Chicago, Chicago, Illinois, May 4, 2012.
13. Physics Department Colloquium, University of Arizona, Tucson, Arizona, April 13, 2012.
12. HEP/AstroPhysics Seminar, Physics Department, University of Michigan, Ann Arbor, Michigan, September 19, 2011.
11. Department of Physics Special Seminar, University of Wisconsin, Madison, September 30, 2010.
10. Special Medium Energy Seminar, University of Illinois at Urbana-Champaign, July 9, 2010.
9. Argonne National Laboratory High Energy Physics Division Seminar, March 17, 2010.
8. Sunday Evening Talk, Amundson-Scott South Pole Station, South Pole, Antarctica, December 5, 2010.
7. Harvard University Laboratory for Particle Physics and Cosmology Seminar Series, February 24, 2009.
6. MIT Laboratory for Nuclear Science Lunch Time Seminar, February 24, 2009.
5. Joint Astrophysics/Nuclear Physics Seminar, Ohio University, April 10, 2007.
4. Nuclear Physics Seminar, University of Maryland, March 30, 2007.
3. Argonne National Laboratory Physics Division Seminar, December 12, 2006.
2. Cosmology and Astrophysics Seminars, University of Wisconsin, Madison, Wisconsin, April 3, 2006.
1. Colloquium, Physics Department, University of North Carolina, Chapel Hill, North Carolina, March 9, 2006.

Contributed Talks & Posters

19. "COSINE-100" TAUP 2017, Sudbury, ON, Canada, Jul. 24 – 28, 2017.
18. "Results from the DM-Ice17 Dark Matter Experiment," Z. Pierpoint for DM-Ice. Division of Nuclear Physics of the American Physical Society, Oct. 28 - 31, 2015, Santa Fe, NM.

17. "Results from the DM-Ice17 Dark Matter Experiment at the South Pole," TAUP 2015, Torino, Italy, September 7 - 11, 2015.
16. "Status of CUORE," Aspen Winter Workshop 2013 - New Directions in Neutrino Physics, Aspen Center for Physics, Aspen, CO, Feb. 3 - 9, 2013 (Poster).
15. "DM-Ice," IAU Beijing IAU XXVIII, International Astronomical Union, Astrophysics from Antarctica, Beijing, China, August 20-24, 2012.
14. "DM-Ice," SCAR 2012, Scientific Committee on Antarctic Research Open Science Conference, Portland, Oregon, July 16-19, 2012.
13. "DM-Ice," UCLA DM 2012, Marina del Rey Marriott, Los Angeles, California, February 22 - 24, 2012.
12. "DM-Ice: A Search for Dark Matter at the South Pole," TAUP 2011, Munich, Germany, September 5-9, 2011.
11. "DM-Ice: A Search for Dark Matter at the South Pole," Pheno Symposium, Madison, WI, May 9-11, 2011.
10. "Studying neutrinos from nearby supernovae with IceCube," Poster for Neutrino 2010, Athens, Greece, June 14-19, 2010.
9. "Production of Neutron Transmutation Doped Germanium Thermistors for CUORE," Fall Meeting of the Division of Nuclear Physics of the American Physical Society, Oakland, California, October 23-26, 2008.
8. "Updates on β - ν correlation measurement of optically trapped ^{21}Na atoms" Fall Meeting of the Division of Nuclear Physics of the American Physical Society, Maui, Hawaii, September 18-22, 2005.
7. "Status of CUORICINO, Prospects for CUORE" Frontiers in Contemporary Physics III, Vanderbilt University Nashville, Tennessee, May 23-28, 2005.
6. "The β - ν Correlation of Optically Trapped ^{21}Na Atoms" Fall Meeting of the Division of Nuclear Physics of the American Physical Society, Chicago, Illinois, 2004.
5. "Beta-Neutrino Correlation Measurement with Sodium-21 in a Magneto-Optical Trap Using Shake-off Electrons" Fall Meeting of the Division of Nuclear Physics of the American Physical Society, Tucson, Arizona, 2003.
4. "Sisyphus Cooling in Ytterbium Intercombination MOT" Division of Atomic, Molecular and Optical Physics of the American Physical Society, Boulder, Colorado, 2003.
3. "Investigation of an Ytterbium MOT Using an Intercombination Transition" Division of Atomic, Molecular and Optical Physics of the American Physical Society, Williamsburg, Virginia, 2002.
2. "Trapping Ytterbium Atoms for an EDM Experiment" Centennial Meeting of the American Physical Society, Atlanta, Georgia, 1999.

1. "Trapping Ytterbium Atoms for an EDM Experiment" Division of Atomic, Molecular and Optical Physics of the American Physical Society, Santa Fe, New Mexico, 1998.

Public Outreach, Public Talks, TV & Radio Appearances, Notable Public Media

Media articles linked from the PDF. You can also find links at <http://maruyama-lab.yale.edu/news-media>

- The results from Nature **564**, 83 (2018) was picked up by news outlets many of which with quotes from Maruyama (33 as of Jan. 2019). See Altmetric score at <https://www.nature.com/articles/s41586-018-0739-1/metrics>, December 2018.
- "Double Beta Decay and Neutrino Physics" Plenary Lecture for Conference Experience for Undergraduate Students, 5th Joint Meeting of the APS Division of Nuclear Physics and the Physical Society of Japan, Waikoloa, HI, October 23 – 27, 2018.
- "Life and Search for Dark Matter at Yale, South Pole, and Underground" Sophomore Dinner, Davenport College, Yale University, October 10, 2018.
- Symmetry Magazine, "Waiting for a sign", June 2018.
- Nature News, COSINE-100 in "Beguiling dark-matter signal persists 20 years on", March 2018.
- interactions.org, "Experiment Provides Deeper Look into the Nature of Neutrinos", Oct. 2017.
- "Yale Wright Laboratory - Student voices 2017", Oct. 2017.
- Daily Nutmeg, "Yale Wright Laboratory: Physical Therapy, ", Jul. 27, 2017.
- "Wright Laboratory Transformed, 2017", May 2017.
- Yale News, "Introducing the new Wright Lab, where physics takes on the universe's biggest questions", May 2017.
- Yale News, "At Yale's newest STEM labs, teaching takes a bold step forward", Apr. 2017.
- Yale Scientific, the Scope, "From WIMPs to Ice Cubes: Inside the Maruyama Lab at Yale", Apr. 2017.
- Yale Scientific, the Scope, "Beyond Dark Matter: The extraordinary life of Vera Rubin", Mar. 2017.
- IceCube Explained, Mar. 2017.
- Nautilus Magazine, Dark Matter Issue, Feb. 2017.
- BBC World Service, Science in Action, Aug. 2016.
- "Disputed dark-matter result gets put to the test," Physics Today, Jul. 2016.
- Scientific American, Apr. 2016.
- Nature News, Apr. 2016.

- Symmetry Magazine, Jan. 2016.
- Yale News, Jan. 22, 2016.
- “Physics Underground,” Invited talk at Conference for Undergraduate Women in Physics, University of California San Diego, Jan. 15 - 17, 2016.
- Nature News, Nov. 2015.
- Nature News, Oct. 2015.
- Yale News, Sep. 2015.
- “Neutrinos and Dark Matter,” Yale Physics Olympics, Yale University, October 17, 2015.
- “Neutrinos, Dark Matter, and the South Pole,” Science on Saturdays, Yale University, March 1, 2014.
- Physics Central, Feb. 2014.
- “Finding Dark Matter at the South Pole,” A Faculty Coterie, University of Wisconsin, Sep. 18, 2012.
- “Living in Antarctica,” University Place Presents - Ep. 738, Wisconsin Public Television, June 26, 2012.
- “Chasing Neutrinos at the South Pole,” The Why Files, whyfiles.org, January 26, 2012.

Publications

Data from Web of Science: 238 items, h-index: 56, Sum of times cited: 9940

Complete list at <http://www.researcherid.com/rid/A-1064-2013>

Books, Chapters, and Edited Volumes

- [1] Reina Maruyama, ed. *Proceedings, Symmetries and Order: Algebraic Methods in Many Body Systems: In honor of Francesco Iachello, on the occasion of his retirement*. Vol. 2150. 1. 2019. ISBN: 9780735418950.

Selected Publications

- [2] P. Adhikari et al. "A search for solar axion induced signals with COSINE-100". In: *Astropart. Phys.* 114 (2020), pp. 101–106. DOI: 10.1016/j.astropartphys.2019.07.004. arXiv: 1904.06860 [hep-ex].
- [3] E. Barbosa de Souza et al. "Study of cosmogenic radionuclides in the COSINE-100 NaI(Tl) detectors". In: *Astropart. Phys.* 115 (2020), p. 102390. DOI: 10.1016/j.astropartphys.2019.102390. arXiv: 1905.12861 [astro-ph.IM].
- [4] D. Q. Adams et al. "Improved Limit on Neutrinoless Double-Beta Decay in ^{130}Te with CUORE". In: *submitted to Phys. Rev. Lett* (2019). arXiv: 1912.10966 [nucl-ex].
- [5] G. Adhikari et al. "COSINE-100 and DAMA/LIBRA-phase2 in WIMP effective models". In: *JCAP* 1906.06 (2019), p. 048. DOI: 10.1088/1475-7516/2019/06/048. arXiv: 1904.00128 [hep-ph].
- [6] G. Adhikari et al. "Search for a Dark Matter-Induced Annual Modulation Signal in NaI(Tl) with the COSINE-100 Experiment". In: *Phys. Rev. Lett.* 123.3 (2019), p. 031302. DOI: 10.1103/PhysRevLett.123.031302. arXiv: 1903.10098 [astro-ph.IM].
- [7] W. R. Armstrong et al. "CUPID pre-CDR". In: (2019). arXiv: 1907.09376 [physics.ins-det].
- [8] C. Ha et al. "First Direct Search for Inelastic Boosted Dark Matter with COSINE-100". In: *Phys. Rev. Lett.* 122.13 (2019), p. 131802. DOI: 10.1103/PhysRevLett.122.131802. arXiv: 1811.09344 [astro-ph.IM].
- [9] Y. J. Ko et al. "Comparison between DAMA/LIBRA and COSINE-100 in the light of Quenching Factors". In: *JCAP* 1911 (2019), p. 008. DOI: 10.1088/1475-7516/2019/11/008. arXiv: 1907.04963 [hep-ex].
- [10] M. G. Aartsen et al. "Multimessenger observations of a flaring blazar coincident with high-energy neutrino IceCube-170922A". In: *Science* 361.6398 (2018), eaat1378. DOI: 10.1126/science.aat1378. arXiv: 1807.08816 [astro-ph.HE].
- [11] M. G. Aartsen et al. "Neutrino emission from the direction of the blazar TXS 0506+056 prior to the IceCube-170922A alert". In: *Science* 361.6398 (2018), pp. 147–151. DOI: 10.1126/science.aat2890. arXiv: 1807.08794 [astro-ph.HE].

- [12] G. Adhikari et al. “Initial Performance of the COSINE-100 Experiment”. In: *Eur. Phys. J. C* 78.2 (2018), p. 107. DOI: 10.1140/epjc/s10052-018-5590-x. arXiv: 1710.05299 [physics.ins-det].
- [13] G. Adhikari et al. “Study of fast neutron detector for COSINE-100 experiment”. In: *JINST* 13.06 (2018), T06005. DOI: 10.1088/1748-0221/13/06/T06005. arXiv: 1805.03381 [physics.ins-det].
- [14] G. Adhikari et al. “The COSINE-100 Data Acquisition System”. In: *JINST* 13.09 (2018), P09006. DOI: 10.1088/1748-0221/13/09/P09006. arXiv: 1806.09788 [physics.ins-det].
- [15] Govinda Adhikari et al. “An experiment to search for dark-matter interactions using sodium iodide detectors”. In: *Nature* 564.7734 (2018). [erratum: *Nature* 566, no. 7742, E2(2019)], pp. 83–86. DOI: 10.1038/s41586-018-0739-1, 10.1038/s41586-019-0890-3. arXiv: 1906.01791 [astro-ph.IM].
- [16] P. Adhikari et al. “Background model for the NaI(Tl) crystals in COSINE-100”. In: *Eur. Phys. J. C* 78 (2018), p. 490. DOI: 10.1140/epjc/s10052-018-5970-2. arXiv: 1804.05167 [astro-ph.IM].
- [17] C. Alduino et al. “First Results from CUORE: A Search for Lepton Number Violation via $0\nu\beta\beta$ Decay of ^{130}Te ”. In: *Phys. Rev. Lett.* 120.13 (2018), p. 132501. DOI: 10.1103/PhysRevLett.120.132501. arXiv: 1710.07988 [nucl-ex].
- [18] C. Alduino et al. “Search for Neutrinoless β^+EC Decay of ^{120}Te with CUORE-0”. In: *Phys. Rev. C* 97.5 (2018), p. 055502. DOI: 10.1103/PhysRevC.97.055502. arXiv: 1710.07459 [nucl-ex].
- [19] H. Prihtiadi et al. “Muon detector for the COSINE-100 experiment”. In: *JINST* 13.02 (2018), T02007. DOI: 10.1088/1748-0221/13/02/T02007. arXiv: 1712.02011 [physics.ins-det].
- [20] L. Zhong et al. “Results from phase 1 of the HAYSTAC microwave cavity axion experiment”. In: *Phys. Rev. D* 97.9 (2018), p. 092001. DOI: 10.1103/PhysRevD.97.092001. arXiv: 1803.03690 [hep-ex].
- [21] M. G. Aartsen et al. “Measurement of the multi-TeV neutrino cross section with IceCube using Earth absorption”. In: *Nature* 551 (2017), pp. 596–600. DOI: 10.1038/nature24459. arXiv: 1711.08119 [hep-ex].
- [22] C. Alduino et al. “CUORE sensitivity to $0\nu\beta\beta$ decay”. In: *Eur. Phys. J. C* 77.8 (2017), p. 532. DOI: 10.1140/epjc/s10052-017-5098-9. arXiv: 1705.10816 [physics.ins-det].
- [23] C. Alduino et al. “Low Energy Analysis Techniques for CUORE”. In: *Eur. Phys. J. C* 77.12 (2017), p. 857. DOI: 10.1140/epjc/s10052-017-5433-1. arXiv: 1708.07809 [physics.ins-det].
- [24] C. Alduino et al. “Measurement of the two-neutrino double-beta decay half-life of ^{130}Te with the CUORE-0 experiment”. In: *Eur. Phys. J. C* 77.1 (2017), p. 13. DOI: 10.1140/epjc/s10052-016-4498-6. arXiv: 1609.01666 [nucl-ex].

- [25] C. Alduino et al. “The projected background for the CUORE experiment”. In: *Eur. Phys. J. C* 77.8 (2017), p. 543. DOI: 10.1140/epjc/s10052-017-5080-6. arXiv: 1704.08970 [physics.ins-det].
- [26] Jeremy S. Cushman et al. “The detector calibration system for the CUORE cryogenic bolometer array”. In: *Nucl. Instrum. Meth. A* 844 (2017), pp. 32–44. DOI: 10.1016/j.nima.2016.11.020. arXiv: 1608.01607 [physics.ins-det].
- [27] E. Barbosa de Souza et al. “First search for a dark matter annual modulation signal with NaI(Tl) in the Southern Hemisphere by DM-Ice17”. In: *Phys. Rev. D* 95.3 (2017), p. 032006. DOI: 10.1103/PhysRevD.95.032006. arXiv: 1602.05939 [physics.ins-det].
- [28] C. Alduino et al. “Analysis techniques for the evaluation of the neutrinoless double- β decay lifetime in ^{130}Te with the CUORE-0 detector”. In: *Phys. Rev. C* 93.4 (2016), p. 045503. DOI: 10.1103/PhysRevC.93.045503. arXiv: 1601.01334 [nucl-ex].
- [29] C. Alduino et al. “CUORE-0 detector: design, construction and operation”. In: *JINST* 11.07 (2016), P07009. DOI: 10.1088/1748-0221/11/07/P07009. arXiv: 1604.05465 [physics.ins-det].
- [30] J. Cherwinka et al. “Measurement of Muon Annual Modulation and Muon-Induced Phosphorescence in NaI(Tl) Crystals with DM-Ice17”. In: *Phys. Rev. D* 93.4 (2016), p. 042001. DOI: 10.1103/PhysRevD.93.042001. arXiv: 1509.02486 [physics.ins-det].
- [31] K. Alfonso et al. “Search for Neutrinoless Double-Beta Decay of ^{130}Te with CUORE-0”. In: *Phys. Rev. Lett.* 115.10 (2015), p. 102502. DOI: 10.1103/PhysRevLett.115.102502. arXiv: 1504.02454 [nucl-ex].
- [32] D. R. Artusa et al. “Searching for neutrinoless double-beta decay of ^{130}Te with CUORE”. In: *Adv. High Energy Phys.* 2015 (2015), p. 879871. DOI: 10.1155/2015/879871. arXiv: 1402.6072 [physics.ins-det].
- [33] D. R. Artusa et al. “Initial performance of the CUORE-0 experiment”. In: *Eur. Phys. J. C* 74.8 (2014), p. 2956. DOI: 10.1140/epjc/s10052-014-2956-6. arXiv: 1402.0922 [physics.ins-det].
- [34] J. Cherwinka et al. “First data from DM-Ice17”. In: *Phys. Rev. D* 90.9 (2014), p. 092005. DOI: 10.1103/PhysRevD.90.092005. arXiv: 1401.4804 [astro-ph.IM].
- [35] M. G. Aartsen et al. “Evidence for High-Energy Extraterrestrial Neutrinos at the Ice-Cube Detector”. In: *Science* 342 (2013), p. 1242856. DOI: 10.1126/science.1242856. arXiv: 1311.5238 [astro-ph.HE].
- [36] F. Alessandria et al. “Search for 14.4 keV solar axions from M1 transition of Fe-57 with CUORE crystals”. In: *JCAP* 1305 (2013), p. 007. DOI: 10.1088/1475-7516/2013/05/007. arXiv: 1209.2800 [hep-ex].
- [37] R. Abbasi et al. “An absence of neutrinos associated with cosmic-ray acceleration in γ -ray bursts”. In: *Nature* 484 (2012), pp. 351–353. DOI: 10.1038/nature11068. arXiv: 1204.4219 [astro-ph.HE].

- [38] F. Alessandria et al. "CUORE crystal validation runs: results on radioactive contamination and extrapolation to CUORE background". In: *Astropart. Phys.* 35 (2012), pp. 839–849. DOI: 10.1016/j.astropartphys.2012.02.008. arXiv: 1108.4757 [nucl-ex].
- [39] J. Cherwinka et al. "A Search for the Dark Matter Annual Modulation in South Pole Ice". In: *Astropart. Phys.* 35 (2012), pp. 749–754. DOI: 10.1016/j.astropartphys.2012.03.003. arXiv: 1106.1156 [astro-ph.HE].
- [40] R. Abbasi et al. "IceCube Sensitivity for Low-Energy Neutrinos from Nearby Supernovae". In: *Astron. Astrophys.* 535 (2011). [Erratum: *Astron. Astrophys.* 563, C1 (2014)], A109. DOI: 10.1051/0004-6361/201117810e, 10.1051/0004-6361/201117810. arXiv: 1108.0171 [astro-ph.HE].
- [41] E. Andreotti et al. " ^{130}Te Neutrinoless Double-Beta Decay with CUORICINO". In: *Astropart. Phys.* 34 (2011), pp. 822–831. DOI: 10.1016/j.astropartphys.2011.02.002. arXiv: 1012.3266 [nucl-ex].
- [42] C. Arnaboldi et al. "Results from a search for the 0 neutrino beta beta-decay of Te-130 ". In: *Phys. Rev. C* 78 (2008), p. 035502. DOI: 10.1103/PhysRevC.78.035502. arXiv: 0802.3439 [hep-ex].
- [43] P. A. Vetter et al. "Measurement of the beta-nu correlation of Na-21 using shakeoff electrons". In: *Phys. Rev. C* 77 (2008), p. 035502. DOI: 10.1103/PhysRevC.77.035502. arXiv: 0805.1212 [nucl-ex].
- [44] D.S. Todd et al. "Design of the low energy astrophysics research facility CLAIRE". In: *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms* 261.1 (2007). The Application of Accelerators in Research and Industry, pp. 544–548. ISSN: 0168-583X. DOI: <https://doi.org/10.1016/j.nimb.2007.04.040>. URL: <http://www.sciencedirect.com/science/article/pii/S0168583X07008002>.
- [45] R. Ardito et al. "CUORE: A Cryogenic underground observatory for rare events". In: (2005). arXiv: hep-ex/0501010 [hep-ex].
- [46] R. Maruyama et al. "Investigation of sub-Doppler cooling in an ytterbium magneto-optical trap". In: *Phys. Rev. A* 68 (1 2003), p. 011403. DOI: 10.1103/PhysRevA.68.011403. URL: <https://link.aps.org/doi/10.1103/PhysRevA.68.011403>.
- [47] Reina Maruyama. "Optical Trapping of Ytterbium Atoms". PhD thesis. Washington U., Seattle, 2003. URL: <http://www.phys.washington.edu/users/fortson/Yb/presentations/MaruyamaThesis.pdf>.

Conference Proceedings

- [48] Reina Maruyama. "Cryogenic Double Beta Decay Experiments: CUORE and CUORICINO". In: *Nucl. Phys. Proc. Suppl.* 221 (2011). [Nucl. Phys. Proc. Suppl. 221, 365 (2011)], pp. 174–178. DOI: 10.1016/j.nuclphysbps.2011.03.116, 10.1016/j.nuclphysbps.2011.10.017. arXiv: 0809.3840 [nucl-ex].

Team & Collaboration-Wide Publications

- [49] M. G. Aartsen et al. “A Search for MeV to TeV Neutrinos from Fast Radio Bursts with IceCube”. In: (2019). arXiv: 1908.09997 [astro-ph.HE].
- [50] M. G. Aartsen et al. “A Search for Neutrino Point-Source Populations in 7 Years of IceCube Data with Neutrino-count Statistics”. In: (2019). arXiv: 1909.08623 [astro-ph.HE].
- [51] M. G. Aartsen et al. “Combined sensitivity to the neutrino mass ordering with JUNO, the IceCube Upgrade, and PINGU”. In: (2019). arXiv: 1911.06745 [hep-ex].
- [52] M. G. Aartsen et al. “Constraints on minute-scale transient astrophysical neutrino sources”. In: *Phys. Rev. Lett.* 122.5 (2019), p. 051102. DOI: 10.1103/PhysRevLett.122.051102. arXiv: 1807.11492 [astro-ph.HE].
- [53] M. G. Aartsen et al. “Constraints on Neutrino Emission from Nearby Galaxies Using the 2MASS Redshift Survey and IceCube”. In: (2019). arXiv: 1911.11809 [astro-ph.HE].
- [54] M. G. Aartsen et al. “Design and Performance of the first IceAct Demonstrator at the South Pole”. In: (2019). arXiv: 1910.06945 [astro-ph.IM].
- [55] M. G. Aartsen et al. “Detection of the Temporal Variation of the Sun’s Cosmic Ray Shadow with the IceCube Detector”. In: *Astrophys. J.* 872.2 (2019), p. 133. DOI: 10.3847/1538-4357/aaffd1. arXiv: 1811.02015 [astro-ph.HE].
- [56] M. G. Aartsen et al. “Efficient propagation of systematic uncertainties from calibration to analysis with the SnowStorm method in IceCube”. In: *JCAP* 1910.10 (2019), p. 048. DOI: 10.1088/1475-7516/2019/10/048. arXiv: 1909.01530 [hep-ex].
- [57] M. G. Aartsen et al. “Measurement of Atmospheric Tau Neutrino Appearance with IceCube DeepCore”. In: *Phys. Rev.* D99.3 (2019), p. 032007. DOI: 10.1103/PhysRevD.99.032007. arXiv: 1901.05366 [hep-ex].
- [58] M. G. Aartsen et al. “Measurements using the inelasticity distribution of multi-TeV neutrino interactions in IceCube”. In: *Phys. Rev.* D99.3 (2019), p. 032004. DOI: 10.1103/PhysRevD.99.032004. arXiv: 1808.07629 [hep-ex].
- [59] M. G. Aartsen et al. “Neutrino astronomy with the next generation IceCube Neutrino Observatory”. In: (2019). arXiv: 1911.02561 [astro-ph.HE].
- [60] M. G. Aartsen et al. “Neutrinos below 100 TeV from the southern sky employing refined veto techniques to IceCube data”. In: *Submitted to: Astropart. Phys.* (2019). arXiv: 1902.05792 [astro-ph.HE].
- [61] M. G. Aartsen et al. “Probing the Neutrino Mass Ordering with Atmospheric Neutrinos from Three Years of IceCube DeepCore Data”. In: (2019). arXiv: 1902.07771 [hep-ex].
- [62] M. G. Aartsen et al. “Search for PeV Gamma-Ray Emission from the Southern Hemisphere with 5 Years of Data from the IceCube Observatory”. In: (2019). arXiv: 1908.09918 [astro-ph.HE].

- [63] M. G. Aartsen et al. “Search for Sources of Astrophysical Neutrinos Using Seven Years of IceCube Cascade Events”. In: *Astrophys. J.* 886 (2019), p. 12. DOI: 10.3847/1538-4357/ab4ae2. arXiv: 1907.06714 [astro-ph.HE].
- [64] M. G. Aartsen et al. “Search for steady point-like sources in the astrophysical muon neutrino flux with 8 years of IceCube data”. In: *Eur. Phys. J. C* 79.3 (2019), p. 234. DOI: 10.1140/epjc/s10052-019-6680-0. arXiv: 1811.07979 [hep-ph].
- [65] M. G. Aartsen et al. “Searches for neutrinos from cosmic-ray interactions in the Sun using seven years of IceCube data”. In: (2019). arXiv: 1912.13135 [astro-ph.HE].
- [66] M. G. Aartsen et al. “Time-integrated Neutrino Source Searches with 10 years of IceCube Data”. In: (2019). arXiv: 1910.08488 [astro-ph.HE].
- [67] M. G. Aartsen et al. “Velocity Independent Constraints on Spin-Dependent DM-Nucleon Interactions from IceCube and PICO”. In: (2019). arXiv: 1907.12509 [astro-ph.HE].
- [68] A. U. Abeysekara et al. “All-Sky Measurement of the Anisotropy of Cosmic Rays at 10 TeV and Mapping of the Local Interstellar Magnetic Field”. In: *Astrophys. J.* 871.1 (2019), p. 96. DOI: 10.3847/1538-4357/aaf5cc. arXiv: 1812.05682 [astro-ph.HE].
- [69] A. Albert et al. “Search for Multimessenger Sources of Gravitational Waves and High-energy Neutrinos with Advanced LIGO during Its First Observing Run, ANTARES, and IceCube”. In: *Astrophys. J.* 870.2 (2019), p. 134. DOI: 10.3847/1538-4357/aaf21d. arXiv: 1810.10693 [astro-ph.HE].
- [70] C. Alduino et al. “Double-beta decay of ^{130}Te to the first 0^+ excited state of ^{130}Xe with CUORE-0”. In: *Eur. Phys. J. C* 79.9 (2019), p. 795. DOI: 10.1140/epjc/s10052-019-7275-5. arXiv: 1811.10363 [nucl-ex].
- [71] S. Garrappa et al. “Investigation of two Fermi-LAT gamma-ray blazars coincident with high-energy neutrinos detected by IceCube”. In: *Astrophys. J.* 880.2 (2019), 880:103. DOI: 10.3847/1538-4357/ab2ada. arXiv: 1901.10806 [astro-ph.HE].
- [72] E. Kankare et al. “Search for transient optical counterparts to high-energy IceCube neutrinos with Pan-STARRS1”. In: *Astron. Astrophys.* 626 (2019), A117. DOI: 10.1051/0004-6361/201935171. arXiv: 1901.11080 [astro-ph.HE].
- [73] M. G. Aartsen et al. “A Search for Neutrino Emission from Fast Radio Bursts with Six Years of IceCube Data”. In: *Astrophys. J.* 857.2 (2018), p. 117. DOI: 10.3847/1538-4357/aab4f8. arXiv: 1712.06277 [astro-ph.HE].
- [74] M. G. Aartsen et al. “Astrophysical neutrinos and cosmic rays observed by IceCube”. In: *Adv. Space Res.* 62 (2018), pp. 2902–2930. DOI: 10.1016/j.asr.2017.05.030. arXiv: 1701.03731 [astro-ph.HE].
- [75] M. G. Aartsen et al. “Computational Techniques for the Analysis of Small Signals in High-Statistics Neutrino Oscillation Experiments”. In: (2018). arXiv: 1803.05390 [physics.data-an].
- [76] M. G. Aartsen et al. “Differential limit on the extremely-high-energy cosmic neutrino flux in the presence of astrophysical background from nine years of IceCube data”. In: *Phys. Rev. D* 98.6 (2018), p. 062003. DOI: 10.1103/PhysRevD.98.062003. arXiv: 1807.01820 [astro-ph.HE].

- [77] M. G. Aartsen et al. “Measurement of Atmospheric Neutrino Oscillations at 6–56 GeV with IceCube DeepCore”. In: *Phys. Rev. Lett.* 120 (7 2018), p. 071801. DOI: 10.1103/PhysRevLett.120.071801. URL: <https://link.aps.org/doi/10.1103/PhysRevLett.120.071801>.
- [78] M. G. Aartsen et al. “Neutrino Interferometry for High-Precision Tests of Lorentz Symmetry with IceCube”. In: *Nature Phys.* 14.9 (2018), pp. 961–966. DOI: 10.1038/s41567-018-0172-2. arXiv: 1709.03434 [hep-ex].
- [79] M. G. Aartsen et al. “Search for neutrinos from decaying dark matter with IceCube”. In: *Eur. Phys. J. C* 78.10 (2018), p. 831. DOI: 10.1140/epjc/s10052-018-6273-3. arXiv: 1804.03848 [astro-ph.HE].
- [80] M. G. Aartsen et al. “Search for Nonstandard Neutrino Interactions with IceCube DeepCore”. In: *Phys. Rev. D* 97.7 (2018), p. 072009. DOI: 10.1103/PhysRevD.97.072009. arXiv: 1709.07079 [hep-ex].
- [81] A. Albert et al. “Joint Constraints on Galactic Diffuse Neutrino Emission from the ANTARES and IceCube Neutrino Telescopes”. In: *Astrophys. J.* 868.2 (2018), p. L20. DOI: 10.3847/2041-8213/aaeecf. arXiv: 1808.03531 [astro-ph.HE].
- [82] C. Alduino et al. “Study of Rare Nuclear Processes with CUORE”. In: *Int. J. Mod. Phys. A* 33.09 (2018), p. 1843002. DOI: 10.1142/S0217751X18430029. arXiv: 1801.05403 [nucl-ex].
- [83] Simone Copello et al. “The commissioning of the CUORE experiment: the mini-tower run”. In: *PoS NEUTEL2017* (2018), p. 072. DOI: 10.22323/1.307.0072.
- [84] Juan Carlos Diaz Velez et al. “Combined Analysis of Cosmic-Ray Anisotropy with IceCube and HAWC”. In: *PoS ICRC2017* (2018), p. 539. DOI: 10.22323/1.301.0539. arXiv: 1708.03005 [astro-ph.HE].
- [85] M. G. Aartsen et al. “All-sky Search for Time-integrated Neutrino Emission from Astrophysical Sources with 7 yr of IceCube Data”. In: *Astrophys. J.* 835.2 (2017), p. 151. DOI: 10.3847/1538-4357/835/2/151. arXiv: 1609.04981 [astro-ph.HE].
- [86] M. G. Aartsen et al. “Constraints on Galactic Neutrino Emission with Seven Years of IceCube Data”. In: *Astrophys. J.* 849.1 (2017), p. 67. DOI: 10.3847/1538-4357/aa8dfb. arXiv: 1707.03416 [astro-ph.HE].
- [87] M. G. Aartsen et al. “Extending the search for muon neutrinos coincident with gamma-ray bursts in IceCube data”. In: *Astrophys. J.* 843.2 (2017), p. 112. DOI: 10.3847/1538-4357/aa7569. arXiv: 1702.06868 [astro-ph.HE].
- [88] M. G. Aartsen et al. “First search for dark matter annihilations in the Earth with the IceCube Detector”. In: *Eur. Phys. J. C* 77.2 (2017), p. 82. DOI: 10.1140/epjc/s10052-016-4582-y. arXiv: 1609.01492 [astro-ph.HE].
- [89] M. G. Aartsen et al. “Measurement of the ν_μ energy spectrum with IceCube-79”. In: *Eur. Phys. J. C* 77.10 (2017), p. 692. DOI: 10.1140/epjc/s10052-017-5261-3. arXiv: 1705.07780 [astro-ph.HE].
- [90] M. G. Aartsen et al. “Multiwavelength follow-up of a rare IceCube neutrino multiplet”. In: *Astron. Astrophys.* 607 (2017), A115. DOI: 10.1051/0004-6361/201730620. arXiv: 1702.06131 [astro-ph.HE].

- [91] M. G. Aartsen et al. “PINGU: A Vision for Neutrino and Particle Physics at the South Pole”. In: *J. Phys.* G44.5 (2017), p. 054006. DOI: 10.1088/1361-6471/44/5/054006. arXiv: 1607.02671 [hep-ex].
- [92] M. G. Aartsen et al. “Search for annihilating dark matter in the Sun with 3 years of IceCube data”. In: *Eur. Phys. J. C*77.3 (2017). [Erratum: *Eur. Phys. J. C*79,no.3,214(2019)], p. 146. DOI: 10.1140/epjc/s10052-019-6702-y, 10.1140/epjc/s10052-017-4689-9. arXiv: 1612.05949 [astro-ph.HE].
- [93] M. G. Aartsen et al. “Search for astrophysical sources of neutrinos using cascade events in IceCube”. In: *Astrophys. J.* 846.2 (2017), p. 136. DOI: 10.3847/1538-4357/aa8508. arXiv: 1705.02383 [astro-ph.HE].
- [94] M. G. Aartsen et al. “Search for Neutrinos from Dark Matter Self-Annihilations in the center of the Milky Way with 3 years of IceCube/DeepCore”. In: *Eur. Phys. J. C*77.9 (2017), p. 627. DOI: 10.1140/epjc/s10052-017-5213-y. arXiv: 1705.08103 [hep-ex].
- [95] M. G. Aartsen et al. “Search for sterile neutrino mixing using three years of IceCube DeepCore data”. In: *Phys. Rev.* D95.11 (2017), p. 112002. DOI: 10.1103/PhysRevD.95.112002. arXiv: 1702.05160 [hep-ex].
- [96] M. G. Aartsen et al. “The contribution of Fermi-2LAC blazars to the diffuse TeV-PeV neutrino flux”. In: *Astrophys. J.* 835.1 (2017), p. 45. DOI: 10.3847/1538-4357/835/1/45. arXiv: 1611.03874 [astro-ph.HE].
- [97] M. G. Aartsen et al. “The IceCube Neutrino Observatory: Instrumentation and Online Systems”. In: *JINST* 12.03 (2017), P03012. DOI: 10.1088/1748-0221/12/03/P03012. arXiv: 1612.05093 [astro-ph.IM].
- [98] M. G. Aartsen et al. “The IceCube Realtime Alert System”. In: *Astropart. Phys.* 92 (2017), pp. 30–41. DOI: 10.1016/j.astropartphys.2017.05.002. arXiv: 1612.06028 [astro-ph.HE].
- [99] B. P. Abbott et al. “Multi-messenger Observations of a Binary Neutron Star Merger”. In: *Astrophys. J.* 848.2 (2017), p. L12. DOI: 10.3847/2041-8213/aa91c9. arXiv: 1710.05833 [astro-ph.HE].
- [100] A. Albert et al. “Search for High-energy Neutrinos from Binary Neutron Star Merger GW170817 with ANTARES, IceCube, and the Pierre Auger Observatory”. In: *Astrophys. J.* 850.2 (2017), p. L35. DOI: 10.3847/2041-8213/aa9aed. arXiv: 1710.05839 [astro-ph.HE].
- [101] A. Albert et al. “Search for High-energy Neutrinos from Gravitational Wave Event GW151226 and Candidate LVT151012 with ANTARES and IceCube”. In: *Phys. Rev.* D96.2 (2017), p. 022005. DOI: 10.1103/PhysRevD.96.022005. arXiv: 1703.06298 [astro-ph.HE].
- [102] M. G. Aartsen et al. “All-flavour Search for Neutrinos from Dark Matter Annihilations in the Milky Way with IceCube/DeepCore”. In: *Eur. Phys. J. C*76.10 (2016), p. 531. DOI: 10.1140/epjc/s10052-016-4375-3. arXiv: 1606.00209 [astro-ph.HE].

- [103] M. G. Aartsen et al. “An All-Sky Search for Three Flavors of Neutrinos from Gamma-Ray Bursts with the IceCube Neutrino Observatory”. In: *Astrophys. J.* 824.2 (2016), p. 115. DOI: 10.3847/0004-637X/824/2/115. arXiv: 1601.06484 [astro-ph.HE].
- [104] M. G. Aartsen et al. “Anisotropy in Cosmic-ray Arrival Directions in the Southern Hemisphere Based on six Years of Data From the Icecube Detector”. In: *Astrophys. J.* 826.2 (2016), p. 220. DOI: 10.3847/0004-637X/826/2/220. arXiv: 1603.01227 [astro-ph.HE].
- [105] M. G. Aartsen et al. “Characterization of the Atmospheric Muon Flux in IceCube”. In: *Astropart. Phys.* 78 (2016), pp. 1–27. DOI: 10.1016/j.astropartphys.2016.01.006. arXiv: 1506.07981 [astro-ph.HE].
- [106] M. G. Aartsen et al. “Constraints on Ultrahigh-Energy Cosmic-Ray Sources from a Search for Neutrinos above 10 PeV with IceCube”. In: *Phys. Rev. Lett.* 117.24 (2016). [Erratum: *Phys. Rev. Lett.* 119, no. 25, 259902 (2017)], p. 241101. DOI: 10.1103/PhysRevLett.117.241101, 10.1103/PhysRevLett.119.259902. arXiv: 1607.05886 [astro-ph.HE].
- [107] M. G. Aartsen et al. “Improved limits on dark matter annihilation in the Sun with the 79-string IceCube detector and implications for supersymmetry”. In: *JCAP* 1604.04 (2016), p. 022. DOI: 10.1088/1475-7516/2016/04/022. arXiv: 1601.00653 [hep-ph].
- [108] M. G. Aartsen et al. “Lowering IceCube’s Energy Threshold for Point Source Searches in the Southern Sky”. In: *Astrophys. J.* 824.2 (2016), p. L28. DOI: 10.3847/2041-8205/824/2/L28. arXiv: 1605.00163 [astro-ph.HE].
- [109] M. G. Aartsen et al. “Neutrino oscillation studies with IceCube-DeepCore”. In: *Nucl. Phys.* B908 (2016), pp. 161–177. DOI: 10.1016/j.nuclphysb.2016.03.028.
- [110] M. G. Aartsen et al. “Observation and Characterization of a Cosmic Muon Neutrino Flux from the Northern Hemisphere using six years of IceCube data”. In: *Astrophys. J.* 833.1 (2016), p. 3. DOI: 10.3847/0004-637X/833/1/3. arXiv: 1607.08006 [astro-ph.HE].
- [111] M. G. Aartsen et al. “Search for Astrophysical Tau Neutrinos in Three Years of IceCube Data”. In: *Phys. Rev.* D93.2 (2016), p. 022001. DOI: 10.1103/PhysRevD.93.022001. arXiv: 1509.06212 [astro-ph.HE].
- [112] M. G. Aartsen et al. “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”. In: *JCAP* 1601.01 (2016), p. 037. DOI: 10.1088/1475-7516/2016/01/037. arXiv: 1511.09408 [astro-ph.HE].
- [113] M. G. Aartsen et al. “Search for Sources of High-Energy Neutrons with four Years of Data from the IceTop Detector”. In: *Astrophys. J.* 830.2 (2016), p. 129. DOI: 10.3847/0004-637X/830/2/129. arXiv: 1607.05614 [astro-ph.HE].
- [114] M. G. Aartsen et al. “Search for Transient Astrophysical Neutrino Emission with IceCube-DeepCore”. In: *Astrophys. J.* 816.2 (2016), p. 75. DOI: 10.3847/0004-637X/816/2/75. arXiv: 1509.05029 [astro-ph.HE].

- [115] M. G. Aartsen et al. “Searches for Relativistic Magnetic Monopoles in IceCube”. In: *Eur. Phys. J. C* 76.3 (2016), p. 133. DOI: 10.1140/epjc/s10052-016-3953-8. arXiv: 1511.01350 [astro-ph.HE].
- [116] M. G. Aartsen et al. “Searches for Sterile Neutrinos with the IceCube Detector”. In: *Phys. Rev. Lett.* 117.7 (2016), p. 071801. DOI: 10.1103/PhysRevLett.117.071801. arXiv: 1605.01990 [hep-ex].
- [117] M. G. Aartsen et al. “Very High-Energy Gamma-Ray Follow-Up Program Using Neutrino Triggers from IceCube”. In: *JINST* 11.11 (2016), P11009. DOI: 10.1088/1748-0221/11/11/P11009. arXiv: 1610.01814 [hep-ex].
- [118] S. Adrian-Martinez et al. “High-energy Neutrino follow-up search of Gravitational Wave Event GW150914 with ANTARES and IceCube”. In: *Phys. Rev. D* 93.12 (2016), p. 122010. DOI: 10.1103/PhysRevD.93.122010. arXiv: 1602.05411 [astro-ph.HE].
- [119] S. Adrian-Martinez et al. “The First Combined Search for Neutrino Point-sources in the Southern Hemisphere With the Antares and Icecube Neutrino Telescopes”. In: *Astrophys. J.* 823.1 (2016), p. 65. DOI: 10.3847/0004-637X/823/1/65. arXiv: 1511.02149 [hep-ex].
- [120] M. G. Aartsen et al. “A combined maximum-likelihood analysis of the high-energy astrophysical neutrino flux measured with IceCube”. In: *Astrophys. J.* 809.1 (2015), p. 98. DOI: 10.1088/0004-637X/809/1/98. arXiv: 1507.03991 [astro-ph.HE].
- [121] M. G. Aartsen et al. “Atmospheric and astrophysical neutrinos above 1 TeV interacting in IceCube”. In: *Phys. Rev. D* 91.2 (2015), p. 022001. DOI: 10.1103/PhysRevD.91.022001. arXiv: 1410.1749 [astro-ph.HE].
- [122] M. G. Aartsen et al. “Determining neutrino oscillation parameters from atmospheric muon neutrino disappearance with three years of IceCube DeepCore data”. In: *Phys. Rev. D* 91.7 (2015), p. 072004. DOI: 10.1103/PhysRevD.91.072004. arXiv: 1410.7227 [hep-ex].
- [123] M. G. Aartsen et al. “Development of a General Analysis and Unfolding Scheme and its Application to Measure the Energy Spectrum of Atmospheric Neutrinos with IceCube”. In: *Eur. Phys. J. C* 75.3 (2015), p. 116. DOI: 10.1140/epjc/s10052-015-3330-z. arXiv: 1409.4535 [astro-ph.HE].
- [124] M. G. Aartsen et al. “Evidence for Astrophysical Muon Neutrinos from the Northern Sky with IceCube”. In: *Phys. Rev. Lett.* 115.8 (2015), p. 081102. DOI: 10.1103/PhysRevLett.115.081102. arXiv: 1507.04005 [astro-ph.HE].
- [125] M. G. Aartsen et al. “Flavor Ratio of Astrophysical Neutrinos above 35 TeV in IceCube”. In: *Phys. Rev. Lett.* 114.17 (2015), p. 171102. DOI: 10.1103/PhysRevLett.114.171102. arXiv: 1502.03376 [astro-ph.HE].
- [126] M. G. Aartsen et al. “Measurement of the Atmospheric ν_e Spectrum with IceCube”. In: *Phys. Rev. D* 91 (2015), p. 122004. DOI: 10.1103/PhysRevD.91.122004. arXiv: 1504.03753 [astro-ph.HE].
- [127] M. G. Aartsen et al. “Multipole analysis of IceCube data to search for dark matter accumulated in the Galactic halo”. In: *Eur. Phys. J. C* 75.99 (2015), p. 20. DOI: 10.1140/epjc/s10052-014-3224-5. arXiv: 1406.6868 [astro-ph.HE].

- [128] M. G. Aartsen et al. “Search for Dark Matter Annihilation in the Galactic Center with IceCube-79”. In: *Eur. Phys. J. C* 75.10 (2015), p. 492. DOI: 10.1140/epjc/s10052-015-3713-1. arXiv: 1505.07259 [astro-ph.HE].
- [129] M. G. Aartsen et al. “Search for Prompt Neutrino Emission from Gamma-Ray Bursts with IceCube”. In: *Astrophys. J.* 805.1 (2015), p. L5. DOI: 10.1088/2041-8205/805/1/L5. arXiv: 1412.6510 [astro-ph.HE].
- [130] M. G. Aartsen et al. “Searches for small-scale anisotropies from neutrino point sources with three years of IceCube data”. In: *Astropart. Phys.* 66 (2015), pp. 39–52. DOI: 10.1016/j.astropartphys.2015.01.001. arXiv: 1408.0634 [astro-ph.HE].
- [131] M. G. Aartsen et al. “The Detection of a SN IIn in Optical Follow-up Observations of IceCube Neutrino Events”. In: *Astrophys. J.* 811.1 (2015), p. 52. DOI: 10.1088/0004-637X/811/1/52. arXiv: 1506.03115 [astro-ph.HE].
- [132] M. G. Aartsen et al. “The IceCube Neutrino Observatory, the Pierre Auger Observatory and the Telescope Array: Joint Contribution to the 34th International Cosmic Ray Conference (ICRC 2015)”. In: (2015). arXiv: 1511.02109 [astro-ph.HE].
- [133] M. G. Aartsen et al. “The IceProd Framework: Distributed Data Processing for the IceCube Neutrino Observatory”. In: *J. Parallel Distrib. Comput.* 75 (2015), pp. 198–211. DOI: 10.1016/j.jpdc.2014.08.001. arXiv: 1311.5904 [cs.DC].
- [134] M. G. Aartsen et al. “Energy Reconstruction Methods in the IceCube Neutrino Telescope”. In: *JINST* 9 (2014), P03009. DOI: 10.1088/1748-0221/9/03/P03009. arXiv: 1311.4767 [physics.ins-det].
- [135] M. G. Aartsen et al. “IceCube-Gen2: A Vision for the Future of Neutrino Astronomy in Antarctica”. In: (2014). arXiv: 1412.5106 [astro-ph.HE].
- [136] M. G. Aartsen et al. “Improvement in Fast Particle Track Reconstruction with Robust Statistics”. In: *Nucl. Instrum. Meth. A* 736 (2014), pp. 143–149. DOI: 10.1016/j.nima.2013.10.074. arXiv: 1308.5501 [astro-ph.IM].
- [137] M. G. Aartsen et al. “Letter of Intent: The Precision IceCube Next Generation Upgrade (PINGU)”. In: (2014). arXiv: 1401.2046 [physics.ins-det].
- [138] M. G. Aartsen et al. “Multimessenger search for sources of gravitational waves and high-energy neutrinos: Initial results for LIGO-Virgo and IceCube”. In: *Phys. Rev. D* 90.10 (2014), p. 102002. DOI: 10.1103/PhysRevD.90.102002. arXiv: 1407.1042 [astro-ph.HE].
- [139] M. G. Aartsen et al. “Observation of High-Energy Astrophysical Neutrinos in Three Years of IceCube Data”. In: *Phys. Rev. Lett.* 113 (2014), p. 101101. DOI: 10.1103/PhysRevLett.113.101101. arXiv: 1405.5303 [astro-ph.HE].
- [140] M. G. Aartsen et al. “Observation of the cosmic-ray shadow of the Moon with IceCube”. In: *Phys. Rev. D* 89.10 (2014), p. 102004. DOI: 10.1103/PhysRevD.89.102004. arXiv: 1305.6811 [astro-ph.HE].
- [141] M. G. Aartsen et al. “Search for a diffuse flux of astrophysical muon neutrinos with the IceCube 59-string configuration”. In: *Phys. Rev. D* 89.6 (2014), p. 062007. DOI: 10.1103/PhysRevD.89.062007. arXiv: 1311.7048 [astro-ph.HE].

- [142] M. G. Aartsen et al. “Search for neutrino-induced particle showers with IceCube-40”. In: *Phys. Rev. D* 89.10 (2014), p. 102001. DOI: 10.1103/PhysRevD.89.102001. arXiv: 1312.0104 [astro-ph.HE].
- [143] M. G. Aartsen et al. “Search for non-relativistic Magnetic Monopoles with IceCube”. In: *Eur. Phys. J. C* 74.7 (2014). [Erratum: *Eur. Phys. J. C* 79, no. 2, 124 (2019)], p. 2938. DOI: 10.1140/epjc/s10052-014-2938-8, 10.1140/epjc/s10052-019-6582-1. arXiv: 1402.3460 [astro-ph.CO].
- [144] M. G. Aartsen et al. “Searches for Extended and Point-like Neutrino Sources with Four Years of IceCube Data”. In: *Astrophys. J.* 796.2 (2014), p. 109. DOI: 10.1088/0004-637X/796/2/109. arXiv: 1406.6757 [astro-ph.HE].
- [145] D. R. Artusa et al. “Exploring the Neutrinoless Double Beta Decay in the Inverted Neutrino Hierarchy with Bolometric Detectors”. In: *Eur. Phys. J. C* 74 (2014), p. 3096. DOI: 10.1140/epjc/s10052-014-3096-8. arXiv: 1404.4469 [nucl-ex].
- [146] M. G. Aartsen et al. “First observation of PeV-energy neutrinos with IceCube”. In: *Phys. Rev. Lett.* 111 (2013), p. 021103. DOI: 10.1103/PhysRevLett.111.021103. arXiv: 1304.5356 [astro-ph.HE].
- [147] M. G. Aartsen et al. “IceCube Search for Dark Matter Annihilation in nearby Galaxies and Galaxy Clusters”. In: *Phys. Rev. D* 88 (2013), p. 122001. DOI: 10.1103/PhysRevD.88.122001. arXiv: 1307.3473 [astro-ph.HE].
- [148] M. G. Aartsen et al. “Measurement of Atmospheric Neutrino Oscillations with IceCube”. In: *Phys. Rev. Lett.* 111.8 (2013), p. 081801. DOI: 10.1103/PhysRevLett.111.081801. arXiv: 1305.3909 [hep-ex].
- [149] M. G. Aartsen et al. “Measurement of South Pole ice transparency with the IceCube LED calibration system”. In: *Nucl. Instrum. Meth. A* 711 (2013), pp. 73–89. DOI: 10.1016/j.nima.2013.01.054. arXiv: 1301.5361 [astro-ph.IM].
- [150] M. G. Aartsen et al. “Measurement of the Atmospheric ν_e flux in IceCube”. In: *Phys. Rev. Lett.* 110.15 (2013), p. 151105. DOI: 10.1103/PhysRevLett.110.151105. arXiv: 1212.4760 [hep-ex].
- [151] M. G. Aartsen et al. “Measurement of the cosmic ray energy spectrum with IceTop-73”. In: *Phys. Rev. D* 88.4 (2013), p. 042004. DOI: 10.1103/PhysRevD.88.042004. arXiv: 1307.3795 [astro-ph.HE].
- [152] M. G. Aartsen et al. “Observation of Cosmic Ray Anisotropy with the IceTop Air Shower Array”. In: *Astrophys. J.* 765 (2013), p. 55. DOI: 10.1088/0004-637X/765/1/55. arXiv: 1210.5278 [astro-ph.HE].
- [153] M. G. Aartsen et al. “PINGU Sensitivity to the Neutrino Mass Hierarchy”. In: *Cosmic Frontier Workshop: Snowmass 2013 Menlo Park, USA, March 6-8, 2013*. 2013. arXiv: 1306.5846 [astro-ph.IM]. URL: <http://www.slac.stanford.edu/econf/C1307292/docs/submittedArxivFiles/1306.5846.pdf>.
- [154] M. G. Aartsen et al. “Probing the origin of cosmic rays with extremely high energy neutrinos using the IceCube Observatory”. In: *Phys. Rev. D* 88 (2013), p. 112008. DOI: 10.1103/PhysRevD.88.112008. arXiv: 1310.5477 [astro-ph.HE].

- [155] M. G. Aartsen et al. “Search for dark matter annihilations in the Sun with the 79-string IceCube detector”. In: *Phys. Rev. Lett.* 110.13 (2013), p. 131302. DOI: 10 . 1103 / PhysRevLett. 110. 131302. arXiv: 1212. 4097 [astro-ph.HE].
- [156] M. G. Aartsen et al. “Search for Galactic PeV Gamma Rays with the IceCube Neutrino Observatory”. In: *Phys. Rev. D* 87.6 (2013), p. 062002. DOI: 10 . 1103 / PhysRevD. 87 . 062002. arXiv: 1210. 7992 [astro-ph.HE].
- [157] M. G. Aartsen et al. “Search for Time-independent Neutrino Emission from Astrophysical Sources with 3 yr of IceCube Data”. In: *Astrophys. J.* 779 (2013), p. 132. DOI: 10 . 1088/0004-637X/779/2/132. arXiv: 1307. 6669 [astro-ph.HE].
- [158] R. Abbasi et al. “All-particle cosmic ray energy spectrum measured with 26 IceTop stations”. In: *Astropart. Phys.* 44 (2013), pp. 40–58. DOI: 10. 1016 / j . astropartphys . 2013. 01. 016. arXiv: 1202. 3039 [astro-ph.HE].
- [159] R. Abbasi et al. “An improved method for measuring muon energy using the truncated mean of dE/dx ”. In: *Nucl. Instrum. Meth.* A703 (2013), pp. 190–198. DOI: 10. 1016 / j . nima. 2012. 11. 081. arXiv: 1208. 3430 [physics.data-an].
- [160] R. Abbasi et al. “Cosmic Ray Composition and Energy Spectrum from 1-30 PeV Using the 40-String Configuration of IceTop and IceCube”. In: *Astropart. Phys.* 42 (2013), pp. 15–32. DOI: 10. 1016 / j . astropartphys . 2012. 11. 003. arXiv: 1207. 3455 [astro-ph.HE].
- [161] R. Abbasi et al. “IceTop: The surface component of IceCube”. In: *Nucl. Instrum. Meth.* A700 (2013), pp. 188–220. DOI: 10 . 1016 / j . nima . 2012 . 10 . 067. arXiv: 1207 . 6326 [astro-ph.IM].
- [162] R. Abbasi et al. “Lateral Distribution of Muons in IceCube Cosmic Ray Events”. In: *Phys. Rev. D* 87.1 (2013), p. 012005. DOI: 10 . 1103 / PhysRevD . 87 . 012005. arXiv: 1208. 2979 [astro-ph.HE].
- [163] R. Abbasi et al. “Search for Relativistic Magnetic Monopoles with IceCube”. In: *Phys. Rev. D* 87.2 (2013), p. 022001. DOI: 10. 1103 / PhysRevD . 87 . 022001. arXiv: 1208 . 4861 [astro-ph.HE].
- [164] R. Abbasi et al. “Searches for high-energy neutrino emission in the Galaxy with the combined IceCube-AMANDA detector”. In: *Astrophys. J.* 763 (2013), p. 33. DOI: 10 . 1088/0004-637X/763/1/33. arXiv: 1210. 3273 [astro-ph.HE].
- [165] F. Alessandria et al. “Validation of techniques to mitigate copper surface contamination in CUORE”. In: *Astropart. Phys.* 45 (2013), pp. 13–22. DOI: 10 . 1016 / j . astropartphys . 2013. 02. 005. arXiv: 1210. 1107 [nucl-ex].
- [166] P. Cushman et al. “Working Group Report: WIMP Dark Matter Direct Detection”. In: *Proceedings, 2013 Community Summer Study on the Future of U.S. Particle Physics: Snowmass on the Mississippi (CSS2013): Minneapolis, MN, USA, July 29-August 6, 2013.* 2013. arXiv: 1310 . 8327 [hep-ex]. URL: <http://www.slac.stanford.edu/econf/C1307292/docs/CosmicFrontier/WIMPDirect-24.pdf>.
- [167] R. Abbasi et al. “A Search for UHE Tau Neutrinos with IceCube”. In: *Phys. Rev. D* 86 (2012), p. 022005. DOI: 10 . 1103 / PhysRevD . 86 . 022005. arXiv: 1202 . 4564 [astro-ph.HE].

- [168] R. Abbasi et al. “Background studies for acoustic neutrino detection at the South Pole”. In: *Astropart. Phys.* 35 (2012), pp. 312–324. DOI: 10.1016/j.astropartphys.2011.09.004. arXiv: 1103.1216 [astro-ph.IM].
- [169] R. Abbasi et al. “Multi-year search for dark matter annihilations in the Sun with the AMANDA-II and IceCube detectors”. In: *Phys. Rev. D* 85 (2012), p. 042002. DOI: 10.1103/PhysRevD.85.042002. arXiv: 1112.1840 [astro-ph.HE].
- [170] R. Abbasi et al. “Neutrino analysis of the September 2010 Crab Nebula flare and time-integrated constraints on neutrino emission from the Crab using IceCube”. In: *Astrophys. J.* 745 (2012), p. 45. DOI: 10.1088/0004-637X/745/1/45. arXiv: 1106.3484 [astro-ph.HE].
- [171] R. Abbasi et al. “Observation of an Anisotropy in the Galactic Cosmic Ray arrival direction at 400 TeV with IceCube”. In: *Astrophys. J.* 746 (2012), p. 33. DOI: 10.1088/0004-637X/746/1/33. arXiv: 1109.1017 [hep-ex].
- [172] R. Abbasi et al. “Search for Neutrinos from Annihilating Dark Matter in the Direction of the Galactic Center with the 40-String IceCube Neutrino Observatory”. In: (2012). arXiv: 1210.3557 [hep-ex].
- [173] R. Abbasi et al. “Searches for periodic neutrino emission from binary systems with 22 and 40 strings of IceCube”. In: *Astrophys. J.* 748 (2012), p. 118. DOI: 10.1088/0004-637X/748/2/118. arXiv: 1108.3023 [astro-ph.HE].
- [174] R. Abbasi et al. “Searching for soft relativistic jets in Core-collapse Supernovae with the IceCube Optical Follow-up Program”. In: *Astron. Astrophys.* 539 (2012), A60. DOI: 10.1051/0004-6361/201118071. arXiv: 1111.7030 [astro-ph.HE].
- [175] R. Abbasi et al. “The Design and Performance of IceCube DeepCore”. In: *Astropart. Phys.* 35 (2012), pp. 615–624. DOI: 10.1016/j.astropartphys.2012.01.004. arXiv: 1109.6096 [astro-ph.IM].
- [176] R. Abbasi et al. “Time-Dependent Searches for Point Sources of Neutrinos with the 40-String and 22-String Configurations of IceCube”. In: *Astrophys. J.* 744 (2012), p. 1. DOI: 10.1088/0004-637X/744/1/1. arXiv: 1104.0075 [astro-ph.HE].
- [177] E. Andreotti et al. “Double-beta decay of ^{130}Te to the first 0^+ excited state of ^{130}Xe with CUORICINO”. In: *Phys. Rev. C* 85 (2012), p. 045503. DOI: 10.1103/PhysRevC.85.045503. arXiv: 1108.4313 [nucl-ex].
- [178] J. Goon et al. “The Long Baseline Neutrino Experiment (LBNE) Water Cherenkov Detector (WCD) Conceptual Design Report (CDR)”. In: (2012). arXiv: 1204.2295 [physics.ins-det].
- [179] P. Scott et al. “Use of event-level neutrino telescope data in global fits for theories of new physics”. In: *JCAP* 1211 (2012), p. 057. DOI: 10.1088/1475-7516/2012/11/057. arXiv: 1207.0810 [hep-ph].
- [180] R. Abbasi et al. “A Search for a Diffuse Flux of Astrophysical Muon Neutrinos with the IceCube 40-String Detector”. In: *Phys. Rev. D* 84 (2011), p. 082001. DOI: 10.1103/PhysRevD.84.082001. arXiv: 1104.5187 [astro-ph.HE].

- [181] R. Abbasi et al. “Constraints on high-energy neutrino emission from SN 2008D”. In: *Astron. Astrophys.* 527 (2011), A28. DOI: 10 . 1051 / 0004 - 6361 / 201015770. arXiv: 1101.3942 [astro-ph.HE].
- [182] R. Abbasi et al. “Constraints on the Extremely-high Energy Cosmic Neutrino Flux with the IceCube 2008-2009 Data”. In: *Phys. Rev. D* 83 (2011). [Erratum: *Phys. Rev. D* 84,079902(2011)], p. 092003. DOI: 10 . 1103 / PhysRevD . 84 . 079902 , 10 . 1103 / PhysRevD . 83 . 092003. arXiv: 1103.4250 [astro-ph.CO].
- [183] R. Abbasi et al. “First search for atmospheric and extraterrestrial neutrino-induced cascades with the IceCube detector”. In: *Phys. Rev. D* 84 (2011), p. 072001. DOI: 10 . 1103 / PhysRevD . 84 . 072001. arXiv: 1101.1692 [astro-ph.HE].
- [184] R. Abbasi et al. “IceCube - Astrophysics and Astroparticle Physics at the South Pole”. In: (2011). arXiv: 1111.5188 [astro-ph.HE].
- [185] R. Abbasi et al. “Measurement of Acoustic Attenuation in South Pole Ice”. In: *Astropart. Phys.* 34 (2011), pp. 382–393. DOI: 10 . 1016 / j . astropartphys . 2010 . 10 . 003. arXiv: 1004.1694 [astro-ph.IM].
- [186] R. Abbasi et al. “Measurement of the atmospheric neutrino energy spectrum from 100 GeV to 400 TeV with IceCube”. In: *Phys. Rev. D* 83 (2011), p. 012001. DOI: 10 . 1103 / PhysRevD . 83 . 012001. arXiv: 1010.3980 [astro-ph.HE].
- [187] R. Abbasi et al. “Observation of Anisotropy in the Arrival Directions of Galactic Cosmic Rays at Multiple Angular Scales with IceCube”. In: *Astrophys. J.* 740 (2011), p. 16. DOI: 10 . 1088 / 0004 - 637X / 740 / 1 / 16. arXiv: 1105.2326 [astro-ph.HE].
- [188] R. Abbasi et al. “Search for dark matter from the Galactic halo with the IceCube Neutrino Telescope”. In: *Phys. Rev. D* 84 (2011), p. 022004. DOI: 10 . 1103 / PhysRevD . 84 . 022004. arXiv: 1101.3349 [astro-ph.HE].
- [189] R. Abbasi et al. “Search for neutrino-induced cascades with five years of AMANDA data”. In: *Astropart. Phys.* 34 (2011), pp. 420–430. DOI: 10 . 1016 / j . astropartphys . 2010 . 10 . 007.
- [190] R. Abbasi et al. “Time-Integrated Searches for Point-like Sources of Neutrinos with the 40-String IceCube Detector”. In: *Astrophys. J.* 732 (2011), p. 18. DOI: 10 . 1088 / 0004 - 637X / 732 / 1 / 18. arXiv: 1012.2137 [astro-ph.HE].
- [191] T. Akiri et al. “The 2010 Interim Report of the Long-Baseline Neutrino Experiment Collaboration Physics Working Groups”. In: (2011). arXiv: 1110.6249 [hep-ex].
- [192] F. Alessandria et al. “Sensitivity of CUORE to Neutrinoless Double-Beta Decay”. In: (2011). arXiv: 1109.0494 [nucl-ex].
- [193] E. Andreotti et al. “Search for beta plus/EC double beta decay of ^{120}Te ”. In: *Astropart. Phys.* 34 (2011), pp. 643–648. DOI: 10 . 1016 / j . astropartphys . 2010 . 12 . 011. arXiv: 1011.4811 [nucl-ex].
- [194] R. Abbasi et al. “Calibration and Characterization of the IceCube Photomultiplier Tube”. In: *Nucl. Instrum. Meth.* A618 (2010), pp. 139–152. DOI: 10 . 1016 / j . nima . 2010 . 03 . 102. arXiv: 1002.2442 [astro-ph.IM].

- [195] R. Abbasi et al. “IceCube Collaboration Contributions to the 2009 International Cosmic Ray Conference”. In: (2010). arXiv: 1004.2093 [astro-ph.HE].
- [196] R. Abbasi et al. “Limits on a muon flux from Kaluza-Klein dark matter annihilations in the Sun from the IceCube 22-string detector”. In: *Phys. Rev. D* 81 (2010), p. 057101. DOI: 10.1103/PhysRevD.81.057101. arXiv: 0910.4480 [astro-ph.CO].
- [197] R. Abbasi et al. “Measurement of sound speed vs. depth in South Pole ice for neutrino astronomy”. In: *Astropart. Phys.* 33 (2010), pp. 277–286. DOI: 10.1016/j.astropartphys.2010.01.012. arXiv: 0909.2629 [astro-ph.IM].
- [198] R. Abbasi et al. “Measurement of the Anisotropy of Cosmic Ray Arrival Directions with IceCube”. In: *Astrophys. J.* 718 (2010), p. L194. DOI: 10.1088/2041-8205/718/2/L194. arXiv: 1005.2960 [astro-ph.HE].
- [199] R. Abbasi et al. “Search for a Lorentz-violating sidereal signal with atmospheric neutrinos in IceCube”. In: *Phys. Rev. D* 82 (2010), p. 112003. DOI: 10.1103/PhysRevD.82.112003. arXiv: 1010.4096 [astro-ph.HE].
- [200] R. Abbasi et al. “Search for muon neutrinos from Gamma-Ray Bursts with the IceCube neutrino telescope”. In: *Astrophys. J.* 710 (2010), pp. 346–359. DOI: 10.1088/0004-637X/710/1/346. arXiv: 0907.2227 [astro-ph.HE].
- [201] R. Abbasi et al. “Search for relativistic magnetic monopoles with the AMANDA-II neutrino telescope”. In: *Eur. Phys. J.* C69 (2010), pp. 361–378. DOI: 10.1140/epjc/s10052-010-1411-6.
- [202] R. Abbasi et al. “The Energy Spectrum of Atmospheric Neutrinos between 2 and 200 TeV with the AMANDA-II Detector”. In: *Astropart. Phys.* 34 (2010), pp. 48–58. DOI: 10.1016/j.astropartphys.2010.05.001. arXiv: 1004.2357 [astro-ph.HE].
- [203] R. Abbasi et al. “The first search for extremely-high energy cosmogenic neutrinos with the IceCube Neutrino Observatory”. In: *Phys. Rev. D* 82 (2010), p. 072003. DOI: 10.1103/PhysRevD.82.072003. arXiv: 1009.1442 [astro-ph.CO].
- [204] E. Andreotti et al. “Muon-induced backgrounds in the CUORICINO experiment”. In: *Astropart. Phys.* 34 (2010), pp. 18–24. DOI: 10.1016/j.astropartphys.2010.04.004. arXiv: 0912.3779 [nucl-ex].
- [205] C. Arnaboldi et al. “Production of high purity TeO₂ single crystals for the study of neutrinoless double beta decay”. In: *J. Cryst. Growth* 312.20 (2010), pp. 2999–3008. DOI: 10.1016/j.jcrysgro.2010.06.034. arXiv: 1005.3686 [cond-mat.mtrl-sci].
- [206] Kang-Sin Choi et al. “E(6,7,8) Magnetized Extra Dimensional Models”. In: *Eur. Phys. J.* C67 (2010), pp. 273–282. DOI: 10.1140/epjc/s10052-010-1275-9. arXiv: 0908.0395 [hep-ph].
- [207] R. Abbasi et al. “Determination of the Atmospheric Neutrino Flux and Searches for New Physics with AMANDA-II”. In: *Phys. Rev. D* 79 (2009), p. 102005. DOI: 10.1103/PhysRevD.79.102005. arXiv: 0902.0675 [astro-ph.HE].
- [208] R. Abbasi et al. “Extending the search for neutrino point sources with IceCube above the horizon”. In: *Phys. Rev. Lett.* 103 (2009), p. 221102. DOI: 10.1103/PhysRevLett.103.221102. arXiv: 0911.2338 [astro-ph.HE].

- [209] R. Abbasi et al. “First Neutrino Point-Source Results From the 22-String IceCube Detector”. In: *Astrophys. J.* 701 (2009), pp. L47–L51. DOI: 10.1088/0004-637X/701/1/L47. arXiv: 0905.2253 [astro-ph.HE].
- [210] R. Abbasi et al. “Limits on a muon flux from neutralino annihilations in the Sun with the IceCube 22-string detector”. In: *Phys. Rev. Lett.* 102 (2009), p. 201302. DOI: 10.1103/PhysRevLett.102.201302. arXiv: 0902.2460 [astro-ph.CO].
- [211] R. Abbasi et al. “Search for high-energy muon neutrinos from the ‘naked-eye’ GRB 080319B with the IceCube neutrino telescope”. In: *Astrophys. J.* 701 (2009). [Erratum: *Astrophys. J.* 708,911(2010)], pp. 1721–1731. DOI: 10.1088/0004-637X/701/2/1721, 10.1088/0004-637X/708/1/911. arXiv: 0902.0131 [astro-ph.HE].
- [212] R. Abbasi et al. “Search for Point Sources of High Energy Neutrinos with Final Data from AMANDA-II”. In: *Phys. Rev. D* 79 (2009), p. 062001. DOI: 10.1103/PhysRevD.79.062001. arXiv: 0809.1646 [astro-ph].
- [213] R. Abbasi et al. “The IceCube Data Acquisition System: Signal Capture, Digitization, and Timestamping”. In: *Nucl. Instrum. Meth. A* 601 (2009), pp. 294–316. DOI: 10.1016/j.nima.2009.01.001. arXiv: 0810.4930 [physics.ins-det].
- [214] R. Abbasi et al. “Solar Energetic Particle Spectrum on 13 December 2006 Determined by IceTop”. In: *Astrophys. J.* 689 (2008), pp. L65–L68. DOI: 10.1086/595679. arXiv: 0810.2034 [astro-ph].
- [215] M. Ackermann et al. “Search for Ultra High-Energy Neutrinos with AMANDA-II”. In: *Astrophys. J.* 675 (2008), pp. 1014–1024. DOI: 10.1086/527046. arXiv: 0711.3022 [astro-ph].
- [216] A. Achterberg et al. “Detection of Atmospheric Muon Neutrinos with the IceCube 9-String Detector”. In: *Phys. Rev. D* 76 (2007), p. 027101. DOI: 10.1103/PhysRevD.76.027101. arXiv: 0705.1781 [astro-ph].
- [217] A. Achterberg et al. “Multi-year search for a diffuse flux of muon neutrinos with AMANDA-II”. In: *Phys. Rev. D* 76 (2007). [Erratum: *Phys. Rev. D* 77,089904(2008)], p. 042008. DOI: 10.1103/PhysRevD.76.042008, 10.1103/PhysRevD.77.089904. arXiv: 0705.1315 [astro-ph].