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APPOINTMENTS

2021-	<i>Postdoctoral Fellow</i> , Arthur B McDonald Canadian Astroparticle Physics Research Institute, Department of Physics, Engineering Physics and Astronomy, Queen's University
2022-	<i>Associate Postdoctoral Researcher</i> , Perimeter Institute for Theoretical Physics
2017-2021	<i>Research Assistant</i> , Department of Physics and Wisconsin IceCube Particle Astrophysics Center (WIPAC), University of Wisconsin-Madison
2016-2017	<i>Teaching Assistant</i> , Department of Physics, University of Wisconsin-Madison

EDUCATION

2016-2021	Ph.D., Physics, University of Wisconsin-Madison, USA <i>Thesis: High-Energy Cosmic Neutrinos as a Window to the Universe</i> <i>Advisor: Prof. Francis Halzen</i>
2012-2016	B.Sc., Honors Physics, Wuhan University, China

HONORS AND AWARDS

2023	IPP Early Career Theory Fellowship, <i>Institute of Particle Physics, Canada</i>
2020	Chinese Government Award for Outstanding Students Abroad
2019	Emanuel Piore Award, <i>University of Wisconsin-Madison</i>
2013-2015	University Scholarship, <i>Wuhan University</i>
2013- 2015	Peng Huanwu Excellent Student Scholarship, <i>Institute of Theoretical Physics, Chinese Academy of Sciences</i>
2013- 2015	Merit Student, <i>Wuhan University</i>
2012	Merit Student of the Province, <i>Education Department of Sichuan Province</i>

SELECTED JOURNAL ARTICLES

For a full publication list, please see [INSPIRE](#)

1. J. F. Acevedo, J. Bramante, **Q. Liu**, N. Tyagi. Neutrino and Gamma Ray Annihilation Signatures from Inelastic Dark Matter Around Neutron Stars, in preparation.
2. IceCube Collaboration, Search for Neutrino Emission from Bright Seyfert Galaxies in the Northern Sky, under collaboration review.
3. **Q. Liu**, D. F. G. Fiorillo, C. A. Argüelles, M. Bustamante, N. Song, and A. C. Vincent. Identifying Energy-Dependent Flavor Transitions in High-Energy Astrophysical Neutrino Measurements. 12 2023 [arXiv:2312.07649](#)
4. A. Fung, S. Heeba, **Q. Liu**, V. Muralidharan, K. Schutz, and A. C. Vincent. New bounds on light millicharged particles from the tip of the red-giant branch. 9 2023 [arXiv:2309.06465](#)
5. **Q. Liu**, N. Song, and A. C. Vincent. Probing neutrino production in high-energy astrophysical neutrino sources with the Glashow resonance. *Phys. Rev. D*, 108(4):043022, 2023 [arXiv:2304.06068](#)
6. IceCube Collaboration. Search for High-energy Neutrino Emission from Galactic X-Ray Binaries with IceCube. *Astrophys. J. Lett.*, 930(2):L24, 2022 [arXiv:2202.11722](#)
7. **Q. Liu**, J. Lazar, C. A. Argüelles, and A. Kheirandish. $\chi\text{ar}\nu$: a tool for neutrino flux generation from WIMPs. *JCAP*, 10:043, 2020 [arXiv:2007.15010](#)
8. IceCube Collaboration. IceCube Search for High-Energy Neutrino Emission from TeV Pulsar Wind Nebulae. *Astrophys. J.*, 898(2):117, 2020 [arXiv:2003.12071](#)
9. G.-y. Huang and **Q. Liu**. Hunting the glashow resonance with pev neutrino telescopes. *JCAP*, 03(03):005, 2020 [arXiv:1912.02976](#)

CONFERENCE PROCEEDINGS

1. C. A. Argüelles, M. Bustamante, D. F. G. Fiorillo, **Q. Liu**, N. Song, and A. C. Vincent. Energy-dependent flavor ratios of High-energy Astrophysical Neutrinos. *PoS*, ICRC2023:1182, 2023 [PoS](#)
2. T. Glauch, A. Kheirandish, T. Kontrimas, **Q. Liu**, and H. Niederhausen. Searching for High-energy Neutrino Emission from Seyfert Galaxies in the Northern Sky with IceCube. In *38th International Cosmic Ray Conference* [arXiv:2308.00024](#)
3. S. Yu, A. Kheirandish, **Q. Liu**, and H. Niederhausen. Search for TeV Neutrinos from Seyfert Galaxies in the Southern Sky using Starting Track Events in IceCube. In *38th International Cosmic Ray Conference*, 7 2023 [arXiv:2307.15620](#)
4. **Q. Liu** and A. Kheirandish. Searching for time-dependent high-energy neutrino emission from X-ray binaries with IceCube. volume ICRC2021, page 1136, 2021 [arXiv:2107.12383](#)
5. J. Lazar, **Q. Liu**, C. Argüelles, and A. Kheirandish. Searching for Dark Matter from the Sun with the IceCube Detector. *PoS*, ICRC2021:20, 2021 [PoS](#)

6. **Q. Liu**, J. Lazar, C. Argüelles, and A. Kheirandish. χ arou: a tool for neutrino flux generation from WIMPs. *PoS, ICRC2021*:559, 2021 [PoS](#)
7. C. A. Argüelles, A. Kheirandish, J. Lazar, and **Q. Liu**. Search for Dark Matter Annihilation to Neutrinos from the Sun. In *IceCube Contributions to the 36th International Cosmic Ray Conference (ICRC2019)*, 2019 [arXiv:1909.03930](#)
8. **Q. Liu** and A. Kheirandish. Searching for High-Energy Neutrino Emission from TeV Pulsar Wind Nebulae. In *IceCube Contributions to the 36th International Cosmic Ray Conference (ICRC2019)*, 2019 [arXiv:1908.05279](#)

INVITED SEMINARS

1. *TBD*, Carleton University, Ottawa, Canada, 3/2024
2. *Sources of High-Energy Neutrinos from the Cosmos*, Institute of High Energy Physics, Beijing, China 10/2023
3. *Prospects for Flavor Measurements of High-Energy Astrophysical Neutrinos*, the Chinese University of Hong Kong, Hong Kong, China 10/2023
4. *Prospects for Flavor Measurements of High-Energy Astrophysical Neutrinos*, Niels Bohr Institute, University of Copenhagen, Copenhagen, Denmark 09/2023
5. *Unveiling the Mystery of High-energy Cosmic Neutrino Sources*, Purple Mountain Observatory, Nanjing, China 11/2022
6. *Unveiling the Mystery of High-energy Cosmic Neutrino Sources*, Tsung-Dao Lee Institute, Shanghai Jiao Tong University, Shanghai, China 11/2022
7. *The Origin of High-Energy Cosmic Neutrinos*, McDonald Institute Seminar Series, Queen's University, Kingston, ON, Canada, 11/2021
8. *High-Energy Astrophysical Neutrinos as a Window to the Universe*, CCAPP Seminar, The Ohio State University, Columbus, OH, USA, 1/2021

CONFERENCES AND WORKSHOPS

Talks

1. *Neutrino and Gamma Ray Annihilation Signatures from Inelastic Dark Matter Around Neutron Stars*, TeVPA2023, Naples, Italy, 9/2023
2. *Probing neutrino production in high-energy astrophysical neutrino sources with the Glashow Resonance*, TAUP2023, Vienna, Austria, 8/2023
3. *Searching for High Energy Neutrino Emission from Seyfert Galaxies with IceCube*, TAUP2023, Vienna, Austria, 8/2023
4. *Searching for High Energy Neutrino Emission from Seyfert Galaxies in the Northern Sky with IceCube*, ICRC2023, Nagoya University, Nagoya, Japan, 7/2023
5. **Plenary** *High-energy Astrophysical Neutrino Observation with IceCube*, Lake Louise Winter Institute, Canada, 2/2023
6. **Invited** *Search for Galactic Sources of High-energy Neutrinos*, NASA Cosmic-Ray Science Interest Group Virtual Meeting, USA, 1/2023

7. **Plenary** *Search for Neutrino Emission from Bright Seyfert Galaxies*, IceCube Collaboration Meeting, Vrije Universiteit Brussel, Brussels, Belgium, 5/2022
8. **Invited** *Neutrino Astronomy at High Energies*, IAS Program on High Energy Physics (HEP 2022), HKUST, Hong Kong, China, 1/2022
9. **Plenary** *High-Energy Neutrino Observation Highlights from IceCube*, TeVPA 2021, Chengdu, China, 10/2021
10. *Searching for time-dependent high-energy neutrino emission from X-ray binaries with IceCube*, ICRC2021, online, DESY, Germany, 7/2021
11. *Search for High-energy Neutrino Emission from X-ray Binaries with IceCube*, APS April Meeting 2021, online, USA, 4/2021
12. *Hunting for Glashow Resonance with PeV Neutrino Telescopes*, NeuTel 2021, University of Padova, Padova, Italy, 2/2021
13. *Neutrino Flux from Dark Matter Annihilation and Decay*, Snowmass TF11 - Neutrino Theory mini-workshop, FNAL, USA, 9/2020
14. *Neutrino Flux Generation from DM annihilation and decay*, IceCube Collaboration Meeting, University of Wisconsin-Madison, Madison, WI, USA, 9/2020
15. *Search for Neutrinos from X-ray binaries*, IceCube Collaboration Meeting, University of Wisconsin-Madison, Madison, WI, USA, 9/2020
16. *Neutrino Fluxes from Dark Matter*, IceCube Collaboration Meeting, Chiba University, Chiba, Japan, 9/2019
17. *Search for Neutrinos from X-ray binaries*, IceCube Collaboration Meeting, Chiba University, Chiba, Japan, 9/2019
18. *Searching for High-Energy Neutrino Emission from TeV Pulsar Wind Nebulae*, ICRC, University of Wisconsin-Madison, Madison, WI, USA, 7/2019
19. *Stacking Search for Neutrinos from PWNe*, Invisibles 19, University of Valencia, Valencia, Spain, 6/2019
20. *Search for Neutrinos from Dark Matter Annihilation from the Sun*, IceCube Collaboration Meeting, University of Wisconsin-Madison, Madison, WI, USA, 5/2019
21. *Search for Neutrinos from X-ray binaries*, IceCube Collaboration Meeting, University of Wisconsin-Madison, Madison, WI, USA, 5/2019
22. *Stacking Search for Neutrinos from PWNe and Results*, IceCube Collaboration Meeting, Stockholm University, Stockholm, Sweden, 9/2018
23. *PWNe Stacking Update*, IceCube Collaboration Meeting, Georgia Tech, Atlanta, GA, USA, 5/2018
24. *A Search for Neutrino Emission from Binary Sources*, IceCube Collaboration Meeting, Humboldt University, Berlin, Germany, 10/2017
25. *Stacking Search for Neutrinos from Pulsar Wind Nebulae*, IceCube Collaboration Meeting, Humboldt University, Berlin, Germany, 10/2017

Posters

1. *Energy-dependent Flavor Ratios of High-energy Astrophysical Neutrinos*, ICRC2023, Nagoya University, Nagoya, Japan, 7/2023
2. χ_{arou} : a tool for neutrino flux generation from WIMPs, ICRC2021, online, DESY, Germany, 7/2021
3. *Neutrino Flux from WIMP Annihilation and Decay*, KASHIWA DARK MATTER SYMPOSIUM, online, Japan, 11/2020
4. *DMFlux: A Tool for Neutrino Flux Generation from Dark Matter Annihilation and Decay*, Neutrino 2020, FNAL, 6/2020
5. *Search for Neutrino Emission from X-ray Binaries with IceCube*, Neutrino 2020, FNAL, 6/2020
6. *Solar WIMP Annihilation Search with IceCube*, ICRC, University of Wisconsin-Madison, Madison, USA, 7/2019
7. *Search for Neutrinos from X-ray binaries*, Invisibles 19, University of Valencia, Valencia, Spain, 6/2019
8. *Searching for Neutrinos from Pulsar Wind Nebulae*, 8th International Fermi Symposium, Baltimore, MD, USA, 10/2018
9. *Searching for Neutrinos from Pulsar Wind Nebulae*, 21st International School of Cosmic Ray Astrophysics, Erice, Sicily, Italy, 8/2018

SERVICE

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- Referee for Physical Review D (PRD) 2022-present
 - Convener, neutrino session at TeV Particle Astrophysics (TeVPA2022) 8/2022
 - Organizer of IceCube Bootcamp, one-week lectures & exercise for new IceCube members 6/2020
 - Organizer of WIPAC X-Meeting, a weekly meeting series for WIPAC grad students and postdocs 2020-2021

TEACHING EXPERIENCE

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- Lecturer, Neutrinos: a laboratory for Quantum Mechanics, *Canadian Astroparticle Physics Summer School* May, 2023
 - Teaching Assistant of Physics 201 (Classical Mechanics) *University of Wisconsin-Madison*, 2016-2017

OUTREACH

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- IceCube event for the International Day of Women and Girls in Science, for achieving full and equal access to and participation in science for women and girls 2021
 - Dark Matter & IceCube for the Dark Matter Day 2019
 - Translation of IceCube comic *Adventures with Rosie & Gibbs: the Lost Penguins* to Chinese