Ali Kheirandish

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Professional Appointments

- **Assistant Professor** — 2022 – present
  Department of Physics & Astronomy
  Nevada Center for Astrophysics (NCfA)
  University of Nevada, Las Vegas
- **Postdoctoral Research Scholar** — 2019 – present
  Department of Physics, Institute for Gravitation & the Cosmos (IGC)
  The Pennsylvania State University
- **Postdoctoral Research Associate** — 2017 – 2019
  Wisconsin IceCube Particle Astrophysics Center (WIPAC)
  University of Wisconsin – Madison
- **Graduate Research Assistant** — 2013 – 2016
  Department of Physics, University of Wisconsin – Madison
- **Visiting Researcher** — 2012 – 2013
  WIPAC, University of Wisconsin – Madison

Education

- **University of Wisconsin**, Madison, WI — 2013 – 2017
  Ph.D. in Physics
- **Isfahan University of Technology**, Isfahan, Iran — 2009 – 2013
  Ph.D. Candidate in Particle Physics
- **Ferdowsi University of Mashhad**, Mashhad, Iran — 2007 – 2009
  M.Sc. in Particle Physics
- **Shiraz University**, Shiraz, Iran — 2003 – 2007
  B.Sc. in Mechanical Engineering

Professional Service & Leadership

- **Conference Organizer**, NCfA Multimessenger Symposium 2024 — Feb 2024
- **Associate Editor**, Journal of High-Energy Astrophysics — Feb 2024 – present
- **NSF review panel member** — Jan 2024
- **IceCube Neutrino Sources working group Co-Leader**, The IceCube Collaboration — Oct 2023 – present
- **IceCube Publication Committee Member**, The IceCube Collaboration — May 2022 – present
- **Panel Chair**, New Evolution of MultiMessenger Astrophysics Symposium, PennState — Aug 2023
- **Conference Organizer**, NCfA Symposium 2023 — Feb 2023
- **NCfA fellowship hiring Committee**, Nevada Center for Astrophysics, UNLV — 2022 – 2023
- **Astrophysical Neutrinos Session chair**, APS April Meeting, New York — Apr 2022
- **Snowmass Panel**, Neutrino Frontier, Energies > 10 GeV — March 2022
- **Peer review referee** for the Astrophysical Journal (ApJ), Journal of High-Energy Physics (JHEP), Physics Letters B (PLB), Publications of the Astronomical Society of Japan (PASJ), Astrophysical Journal Letters (ApJ Lett.), Journal of Cosmology & Astroparticle physics (JCAP), Physical Review D (PRD), Physical Review Letters (PRL)
- **Session chair**, high-energy cosmic ray session at TAUP 2019 — Sep 2019
- **Organizer**, IceCube-Astronomy meetings at UW–Madison — 2017 – 2018

Awards & Grants

- ◇ Co-Investigator, *Nevada Multimessenger Astrophysics*, NASA EPSCoR Grant 80NSSC23M0104 (PI: Bing Zhang) 2023
- ◇ Simon's Foundation Travel Support *to visit Aspen Center for Physics* 2021
- ◇ APS FEC Mini Grant *for the 2021 April Meeting* 2021
- ◇ IGC Postdoctoral Fellowship Award, Penn State 2019
- ◇ Travel financial support, ICTP, Trieste, Italy *to attend NUSKY2011* 2011

Peer-reviewed Publications (selected†)

†For a complete publication list, see my iNSPIRE profile.

31. IceCube Collaboration, **IceCube Search for Neutrino Emission from X-ray Bright Seyfert Galaxies**, prepared for submission to ApJ, [2406.07601]
30. Alex Y. Wen, Carlos A. Argüelles, Ali Kheirandish, Kohta Murase, **Detecting High-Energy Neutrinos from Galactic Supernovae with ATLAS**, Phys. Rev. Lett. 132, 061001 , [2309.09771]
29. Deheng Song, Kohta Murase, Ali Kheirandish, **Constraining decaying very heavy dark matter from galaxy clusters with 14 year Fermi-LAT data**, JCAP 03 (2024) 024, [2308.00589]
28. IceCube Collaboration, **Observation of high-energy neutrinos from the Galactic plane**, Science 380 (2023) 6652, [2307.04427]
27. IceCube Collaboration, **Evidence for neutrino emission from the nearby active galaxy NGC 1068**, Science 378 (2022) 6619, 538-543, [2211.09972]
26. Kohta Murase, Mainak Mukhopadhyay, Ali Kheirandish, Shigeo S. Kimura, & Ke Fang, **Neutrinos from the Brightest Gamma-Ray Burst?**, ApJ Letters 941 (2022) 10, [2210.15625]
25. C. Argüelles, D. Delgado, A. Friedlander, A. Kheirandish, I. Safa, A. C. Vincent, & H. White, **Dark Matter Decay to Neutrinos**, Phys. Rev. D 108, 123021, [2210.01303]
24. Jose Carpio, Ali Kheirandish, & Kohta Murase, **Time-delayed neutrino emission from supernovae as a probe of dark matter-neutrino interactions**, JCAP 04 (2023) 019, [2204.09650]
23. Ali Kheirandish & Kohta Murase, **Detecting High-Energy Neutrino Minibursts from Local Supernovae with Multiple Neutrino Observatories**, 2023 ApJ Letters 956 L8, [2204.08518]
22. Ryan Eskenasy, Ali Kheirandish, & Kohta Murase, **Light Curves of BSM-induced Neutrino Echoes in the Optically Thin Limit**, Phys. Rev. D 107, 103038, [2204.08924]
21. Carlos A. Argüelles, Francis Halzen, Ali Kheirandish, Ibrahim Safa, **PeV Neutrinos to Unveil Ultra-High-Energy Sources**, submitted to ApJ Letters, [2203.13827]
20. IceCube Collaboration, **Search for High-Energy Neutrino Emission from Galactic X-ray Binaries with IceCube**, ApJ Letters 930 (2022) 2, L24, [2202.11722]
19. Ali Kheirandish, Kohta Murase, & Shigeo Kimura, **High-Energy Neutrinos from Magnetized Coronae of Active Galactic Nuclei & Prospects for Identification of Seyfert Galaxies & Quasars in Neutrino Telescopes**, ApJ 922 45 (2021), [2102.04475]iNSPIRE 50+
18. C. A. Argüelles, A. Diaz, A. Kheirandish, A. Olivares-Del-Campo, I. Safa, & A. Vincent, **Dark Matter Annihilation to Neutrinos**, Rev. Mod. Phys. 93, 35007 (2021), [1912.09486] iNSPIRE 100+
17. Q. Liu, J. Lazzar, C. Argüelles, A. Kheirandish, **χaroν: a tool for neutrino flux generation from WIMP**, JCAP 10 (2020) 043, [2007.15010]
16. IceCube Collaboration, **IceCube Search for High-Energy Neutrino Emission from TeV Pulsar Wind Nebulae**, ApJ 898, 117 (2020), [2003.12071]
15. I. Safa, A. Pizzuto, C. Argüelles. F. Halzen, R. Hussain, A. Kheirandish, & J. Vandenbroucke, **Observing EHE Neutrinos Through the Earth: GZK & Anomalous ANITA Events**, JCAP 2001 (2020) no.01, 012, [1909.10487]
14. IceCube Collaboration, **A Search for MeV to TeV Neutrinos from Fast Radio Bursts with IceCube**, ApJ 890 , 111 (2020), [1908.09997]
13. Francis Halzen & Ali Kheirandish **Multimessenger Search for the Sources of Cosmic Rays Using Cosmic Neutrinos**, Front. Astron. Space Sci 6 (2019) 32

12. Francis Halzen, Ali Kheirandish, Tom Weisgarber, & Scott P. Wakely, **On the Neutrino Flares from the Direction of TXS 0506+056**, ApJ Letters 874 (2019) no.1, 9, [1811.07439] iNSPIRE 50+
11. IceCube Collaboration, *Neutrino emission from the direction of the blazar TXS 0506+056 prior to the IceCube-170922A alert*, Science 361 (2018) no.6398, 147-151[1807.08794]
10. IceCube Collaboration+, *Multimessenger observations of a flaring blazar coincident with high-energy neutrino IceCube-170922A*, Science 361 (2018) 6398 [1807.08816]
9. IceCube Collaboration, **Test of Space-Time Symmetry Using Neutrino Interferometer**, Nature Physics (2018) s41567-018-0172-2, [1709.03434] iNSPIRE 100+
8. Aaron C. Vincent, Carlos A. Argüelles, & Ali Kheirandish, **High-energy neutrino attenuation in the Earth and its associated uncertainties**, JCAP 1711 (2017) no.11, 012, [1706.09895]
7. T. M. Yoast-Hull, J. S. Gallagher III, F. Halzen, A. Kheirandish, & E. G. Zweibel, **γ-ray Puzzle in Cygnus X: Implications for High-Energy Neutrinos**, Phys. Rev. D96 (2017) no.4, 043011, [1703.02590]
6. Carlos A. Argüelles, Ali Kheirandish, & Aaron C. Vincent, **Imaging Galactic Dark Matter with High-Energy Cosmic Neutrinos**, Phys. Rev. Lett. 119 (2017) no.20, 201801, [1703.00451] iNSPIRE 50+
5. Sam Fahey, Ali Kheirandish, Justin Vandenbroucke, Donglian Xu, **A Search for Neutrinos from Fast Radio Burst with IceCube**, ApJ 845 (2017) no.1, [1611.03062]
4. Francis Halzen, Ali Kheirandish, & Viviana Niro, **Prospect for Detecting Galactic Sources of Cosmic Neutrinos with IceCube: An update**, Astropart. Phys. 86 (2017) 46-56, [1609.03072]
3. Francis Halzen & Ali Kheirandish, **High-Energy Neutrinos from Recent Blazar Flares**, ApJ 831 (2016) no.1, 12, [1605.06119]
2. J. Becker Tjus, B. Eichmann, F. Halzen, A. Kheirandish, & S. M. Saba, **High-Energy Neutrinos from Radio Galaxies**, Phys. Rev. D89 (2014) 12, 123005, [1406.0506] iNSPIRE 50+
1. S. Aghababei, M. Haghighat, & A. Kheirandish, **Lorentz Violation in the Higgs Sector and the Noncommutative Standard Model**, Phys. Rev. D87 (2013) 4, 047703, [1302.5023]

Preprints

1. Carlos A. Argüelles, Francis Halzen, Ali Kheirandish, Ibrahim Safa, **PeV Neutrinos to Unveil Ultra-High-Energy Sources**, [2203.13827]

Review Articles

3. Markus Ackermann, ..., Ali Kheirandish, *et al.*, **High-Energy & Ultra-High-Energy Neutrinos**, Snowmass White Paper, JHEAp 36 (2022) 55-110, [2203.08096] iNSPIRE 100+
2. Francis Halzen & Ali Kheirandish, **High-Energy Neutrinos from the Cosmos**, Neutrino Physics & Astrophysics, The Encyclopedia of Cosmology II, The Encyclopedia of Cosmology, pp. 107-235 (2023), [2202.00694]
1. Ali Kheirandish, **Identifying Galactic Sources of High-Energy Neutrinos**, Invited Review for Topical Collection: Plasma, Particles, & Photons: ISM Physics Revisited Astrophys Space Sci (2020) 365:108, [2006.16087]

News, Views, & Comments

2. Francis Halzen & Ali Kheirandish, **Black holes associated with cosmic neutrino flares**, Nature Physics 16 (2020) 5, 498-500
1. Francis Halzen & Ali Kheirandish, **Whopper Neutrinos on Ice**, The High Energy Astrophysics Division (HEAD) Newsletter, Fall 2019

Conference Proceedings

13. T. Glauch, A. Kheirandish, T. Kontrimas, Q. Liu, H. Niederhausen, **Searching for High-Energy Neutrino Emission from Seyfert Galaxies in the Northern Sky with IceCube**, Proceedings of the 38th International Cosmic Ray (ICRC2023)
12. S. Yu, A. Kheirandish, Q. Liu, H. Niederhausen, **Search for Neutrino Emissions from Seyfert Galaxies in the Southern Sky using Track Events in IceCube**, Proceedings of the 38th International Cosmic Ray (ICRC2023)
11. A. Kheirandish, C. Argüelles, A. Diaz, I. Safa, A. Vincent, **Dark Matter Annihilation to Neutrinos: New Limits & Future Prospects**, Proceedings of the 37th International Cosmic Ray (ICRC2021)

10. C. Argüelles, A. Diaz, A. Kheirandish, I. Safa, A. Vincent, **Dark Matter Annihilation to Neutrinos: New Limits & Future Prospects**, Proceedings of the 37th International Cosmic Ray Conference (ICRC2021)
9. Ali Kheirandish, **Prospects for Identifying Bright Seyfert Galaxies in Current & Future Neutrino Telescopes**, XIX International Workshop on Neutrino Telescopes (NuTel 2021)
8. Ryan Eskenasy, Ali Kheirandish, & Kohta Murase, **Light curves of BSM-induced neutrino echoes in the optically thin limit**, Neutrino 2020 Conference
7. Ali Kheirandish, **IceCube Search for Galactic Neutrino Sources based on Very High Energy γ-ray Observations**, Proceedings of the 16th International Conference on Topics in Astroparticle & Underground Physics (TAUP 2019)
6. Ali Kheirandish & Joshua Wood, **IceCube Search for Neutrino Sources based on HAWC Observations of the Galactic Plane**, Proceedings of the 36th International Cosmic Ray Conference (ICRC2019)
5. A. Kheirandish, A. Pizzutto, J. Vandenbroucke, **Searches for neutrinos from fast radio bursts with IceCube**, Proceedings of the 36th International Cosmic Ray Conference (ICRC2019)
4. Qinrui Liu & Ali Kheirandish, **Searching for Neutrino Emission from TeV Pulsar Wind Nebulae**, Proceedings of the 36th International Cosmic Ray Conference (ICRC2019)
3. C. A. Argüelles, M. Bustamante, A. Kheirandish, S. Palomares-Ruiz, J. Salvado, A. C. Vincent, **Fundamental Physics with High-Energy Cosmic Neutrinos Today and in the Future**, Proceedings of the 36th International Cosmic Ray Conference (ICRC2019)
2. Ali Kheirandish, **Sources of Astrophysical Neutrinos**, Proceedings of the XVIII International Workshop on Neutrino Telescopes (NuTel 2019)
1. C. Argüelles, A. Kheirandish, A. Vincent, **Constraining Dark Matter Neutrino Interactions with High Energy Neutrinos**, Proceedings of the 38th International Conference on High Energy Physics (ICHEP2016)

Invited Conference & Workshop Talks

17. **IceCube and High-Energy Cosmic Neutrinos**
Neutrinos from Home Conference, Apr 2024 (Online)
16. **Extragalatci Sources of High-Energy Neutrinos**
MANTS 2024, Ruhr-University, Bochum, Germany, Mar 2024
15. **On the Evolution of Multimessenger Search for the origin of IceCube Neutrinos**
New Evolution of MultiMessenger Astrophysics (NEMMA), The Pennsylvania State University, University Park, PA, Aug 2023
14. **Multimessenger Picture of Neutrino Emission from Obscured Active Galactic Nuclei**
HEAD 20, 20th Divisional meeting of the high energy astrophysics division, American Astronomical Society, Waikola, HI, Mar 2023
13. **Exploring Neutrinos' Unique Insight into the Universe**
Society of Physics Students Meeting, University of Nevada, Las Vegas, Oct 2022
12. **On the neutrino flux from NGC 1068 & Bright Seyfert Galaxies**
Science Plenary, IceCube Collaboration Meeting, Madison, WI, Sep 2022
11. **Theory Overview of Neutrino Astrophysics**
CIPANP 20222, Orlando, FL, Sep 2022
10. **Dark Matter Searches at Neutrino Experiments**
2022 Conference on Flavor Physics & CP Violation (FPCP2022), University of Missisipi, MP, May 2022
9. **Neutrinos from Astrophysical Sources**
APS DAP session, APS April Meeting 2022, New York, NY, Apr 2022
8. **High-Energy Neutrino Emission from Core-Collapse Supernovae**
IceCube Supernova Workshop, Oct 2021 (Online)
7. **Dark Matter in the Realm of Neutrinos**
Multimessenger Study of Heavy Dark Matter, Yukawa Institute for Theoretical Physics, Kyoto University, Kyoto, Japan, Aug 2021 (Online)
6. **High-Energy Neutrinos as Probes of New Physics**
Connecting high-energy astroparticle physics for origins of cosmic rays & future perspectives, Yukawa Institute for Theoretical Physics, Kyoto University, Kyoto, Japan, Dec 2020 (Online)

5. **What Is Unique About TXS 0506+056?**
   Science Plenary for IceCube Collaboration Meeting, Chiba University, Chiba, Japan, Sep 2019
4. **Sources of Astrophysical Neutrinos**
   The XVIII International Workshop on Neutrino Telescopes, Venice, Mar 2019
3. **Multimessenger Observations and the Path to Uncovering Cosmic Ray Sources**
   Workshop on the Vision for the Next Decades in Astrophysics with Gravitational Waves & Other Cosmic Messengers, Columbia University, NY, Nov 2018
2. **Highlights from the IceCube Neutrino Observatory**
   The Particle Frontier, Aspen Winter Conference, Aspen, CO, Mar 2018
1. **Targeting and Constraining Galactic TeV Emitters with IceCube**
   Finding the Roadmap to the First Neutrino Source, Drexel University, Philadelphia, PA, Jun 2016

Invited Seminars

16. **Multimessenger Astrophysics and the Emerging Picture of High-Energy Neutrino Sources**
    Particle Physics Seminar, University of Delaware, Newark, DL, Apr 2024
15. **High-Energy Neutrino from Hidden Cores of Active Galactic Nuclei**
    THEAPA Seminar, Joint University of Maryland and Cambridge University Meeting, Mar 2024 (Online)
14. **High-Energy Neutrino Astrophysics: A New Window to the Universe**
    Seminar, Wichita State University, Wichita, KS, Nov 2023
13. **Multimessenger Astrophysics & the Evidence for the Origin of High-Energy Cosmic Neutrinos**
    HEP Seminar, Columbia University, New York, NY, Apr 2023
12. **Multimessenger Astrophysics & the Quest for the Origin of High-Energy Cosmic Neutrinos**
    University of Nevada, Las Vegas, NV, Apr 2022
11. **Cosmic Neutrinos Origin and Novel Opportunities to Probe for New Physics**
    LPPC Seminar, Harvard University, Cambridge, MA, Dec 2021
10. **Cosmic Neutrinos at the Intersection of Particle Physics, Astrophysics, & Cosmology**
    Max Planck Institute for Physics, Munich, Germany, Nov 2021 (Online)
9. **Prospective Sources of High-Energy Cosmic Neutrinos**
   Neils Bohr Institute, Copenhagen, Denmark, Oct 2021 (Online)
8. **Probing New Physics with High-Energy Neutrinos**
   HEPAP Seminar, The Pennsylvania State University, University Park, PA, Jan 2020
7. **Cosmic Neutrinos and the Unique Insights They Provide into the High-Energy Universe**
   Center for Relativistic Astrophysics, Georgia Institute of Technology, Nov 2019
6. **The First Evidence for the Origin of High-Energy Cosmic Neutrinos: Multimessenger Observation of a Flaring Blazar**
   Cosmology Seminar, University of Minnesota, Minneapolis, MN, Oct 2018
5. **Multimessenger Astrophysics and the Origin of High-Energy Cosmic Neutrinos**
   CTC Seminar, University of Maryland, College Park, MD, Nov 2017
4. **Searching for the Origin of High-Energy Cosmic Neutrinos**
   High-energy Physics Seminar, Northwestern University, Evanston, IL, Oct 2017
3. **Multimessenger Astronomy and the Origin of IceCube Cosmic Neutrinos**
   Center for Cosmology & AstroParticle Physics, Ohio State University, Columbus, OH, Sep 2017
2. **Identifying Sources of Cosmic Neutrinos**
   HEAP Seminar, The Pennsylvania State University, PA, Jun 2017
1. **Astroparticle Physics with High-Energy Neutrinos**
   Webinar for Institute for fundamental Sciences (IPM), Tehran, Iran, Nov 2015 (Online)

Contributed Talks

24. **Prospects for Identifying Bright Seyfert Galaxies in Current & Future Neutrino Telescopes**
    44th COSPAR Scientific Assembly (COSPAR 2022), Athens, Greece, Jul 2022 (Online)

23. **Light Curves of BSM-induced Neutrino Echoes**
17th International Conference on Topics in Astroparticle & Underground Physics (TAUP 2021), Valencia, Spain, Aug 2021 (Online)

22. **High-Energy Neutrinos from Supernovae: Prospects for Identification in Current & Future Neutrino Telescopes**
17th International Conference on Topics in Astroparticle & Underground Physics (TAUP 2021), Valencia, Spain, Aug 2021 (Online)

21. **Dark Matter Annihilation to Neutrinos: New Limits & Future Prospects**
ICRC 2021, Berlin, Germany, July 2021, (Online)

20. **Transient Sources & the light curves of BSM-induced neutrino echoes in the optically thin limit**
The 2021 Phenomenology Symposium, University of Pittsburg, PA, May 2021 (Online)

19. **Prospects for Identifying Luminous Seyfert Galaxies in Current & Future Neutrino Telescopes**
APS April Meeting, Apr 2021, (Online)

18. **Prospects for Identifying Luminous Seyfert Galaxies in Current & Future Neutrino Telescopes**
XIX International Workshop on Neutrino Telescopes, Venice, Italy, Feb 2021, (Online)

17. **Dark Matter Annihilation to Neutrinos: New Limits & Future Prospects**
The 2020 Phenomenology Symposium (Pheno 2020), University of Pittsburg, PA, May 2020

16. **IceCube Search for Galactic Sources of High-Energy Neutrinos based on HAWC Observation of the Milky Way**
16th International Conference on Topics in Astroparticle & Underground Physics (TAUP 2019), Toyama, Japan, Sep 2019

15. **IceCube Search for Neutrino Sources based on HAWC Observations of the Galactic Plane**
36th International Cosmic Ray Conference (ICRC2019), Madison, WI, Jul 2019

14. **Searching for the Galactic Sources of High-Energy Cosmic Neutrinos**
Institute for Gravitation & the Cosmos at 25 (IGC@25): Multimessenger Universe, The Pennsylvania State University, Jun 2019

13. **Searching for Neutrino Emission from Binary sources in IceCube**
IceCube Spring Collaboration Meeting, Georgia Institute of Technology, May 2018

12. **Neutrino Interferometry for High-Precision Tests of Lorentz Symmetry with IceCube**
APS April Meeting, Columbus, OH, Apr 2018

11. **Flaring Sources and the High-Energy Cosmic Neutrino Flux**
8th International Fermi Symposium, Baltimore, MD, Oct 2018

10. **IceCube Searches for Galactic Sources of High-Energy Cosmic Neutrinos**
2017 Joint Space Institute (JSI) Workshop, Annapolis, MD, Nov 2017

9. **Imaging Galactic Dark Matter with High-Energy Cosmic Neutrinos**
TeV Particle Astrophysics (TeVPA2017), Columbus, Ohio, Sep 2017

8. **Imaging Galactic Dark Matter with High-Energy Cosmic Neutrinos**
The 26th Workshop on Weak Interactions & Neutrinos (WIN2017), UC – Irvine, CA, Jun 2017

7. **Prospects for Observation of Galactic Sources of Cosmic Neutrinos**
IceCube Particle Astrophysics Symposium, University of Wisconsin, Madison, WI, May 2017

6. **Searching for Galactic Sources of Cosmic Neutrinos in HAWC 2HWC Catalog**
IceCube Spring Collaboration Meeting, University of Wisconsin, Madison, WI, Apr 2017

5. **Prospects for Detecting Galactic Sources of Cosmic Neutrinos in IceCube**
APS Apri Meeting, Washington DC, Jan 2017

4. **Searching for Dark Matter-Neutrino Interaction with High-Energy Neutrinos in IceCube**
38th International Conference on High Energy Physics (ICHEP2016), Chicago, IL, Aug 2016

3. **Search for Fast Radio Burst in IceCube Supernova Data**
IceCube Spring Collaboration Meeting, Stony Brook University, Stony Brook, NY, 2016

2. **High-Energy Neutrinos from Flares of Blazar 3C 279**
IceCube Spring Collaboration Meeting, Stony Brook University, Stony Brook, NY, Apr 2016

1. **Lorentz Violating Coefficients from Noncommutative Standard Model**
IPM Workshop on Recent Developments in Phenomenology of Particle Physics, Tehran, Iran, Sep 2011

Teaching Experience

◇ Graduate Teaching:

AST 733: Particle Astrophysics Spring 2024
Dept. of Physics and Astronomy, University of Nevada, Las Vegas, NV
advanced-level course for graduate students in physics and astronomy

PHY 771: Special Topics Spring 2023
Dept. of Physics and Astronomy, University of Nevada, Las Vegas, NV
advanced-level course for graduate students in physics and astronomy

◇ Undergraduate Teaching:

AST 103: Introductory Astronomy Fall 2023
Dept. of Physics and Astronomy, University of Nevada, Las Vegas, NV
entry-level course for freshmen students entering STEM majors (59 students)

Introduction to Mechanics Summer 2021
Millennium Scholars Program, The Pennsylvania State University, University Park, PA
entry-level course for freshmen students entering STEM majors ($\sim$ 20 students)

Dynamics Spring 2011
Bonyan private university, Shahin Shar, Iran
Intermediate/advanced-level core course for undergraduates with civil engineering major (80 students)

Introductory Physics: Mechanics Laboratory Fall 2010
Isfahan University of Technology, Isfahan, Iran
entry-level course for freshmen students with engineering majors (25 students)

Introductory Physics: Electromagnetism Laboratory Fall 2009
Isfahan University of Technology, Isfahan, Iran
entry-level course for freshmen students with engineering majors (25 students)

◇ School & Workshop Teaching:

On the Modeling of Neutrino Emission from TXS 0506+056 Aug 2019
Workshop on High-Energy Extragalactic Astrophysics, Dept. of Astronomy, UW–Madison

High-Energy Cosmic Neutrinos May 2017
IceCube Spring Bootcamp, Wisconsin IceCube Particle Astrophysics Center, Madison, WI
lectures for graduate students of the IceCube Collaboration

Advanced statistics guided projects May 2016
IceCube Spring Bootcamp, Wisconsin IceCube Particle Astrophysics Center, Madison, WI
lectures for graduate students of the IceCube Collaboration

Mentoring Experience

Mentored Postdocs at UNLV:

◇ Jose Carpio 2023 – present
IceCube data analysis and HE Astrophysics phenomenology

◇ Sreetama Goswami 2023 – present
IceCube and IceCube-Upgrade data analysis

Mentored Graduate Students at UNLV:

◇ Tianyi Ding 2023 – present
Multimessenger follow up of IceCube neutrinos

Graduate & Undergraduate Co-advising:

◇ Ryan Eskenasy (Undergraduate Student at Penn State, now graduate student at U. Kansas) 2019 – 2021
Analytical solutions to the new physics induced delays in multimessenger observations

◇ Qinrui Liu (Ph.D. Student at UW-Madison, now Postdoc at Queens University, Canada) 2017 – 2021
Searching for Galactic sources of cosmic neutrinos

◇ Ibrahim Safa (Ph.D. Student at UW-Madison, now postdoc at Columbia U.) 2018 – 2020
Dark matter annihilation to neutrinos, search for the correlation of HE neutrinos with radio bright AGN

Outreach Activities

◇ Judge for the Physics & Astronomy projects at the high school division of Beal Bank USA Southern Nevada Regional Science & Engineering Fair Mar 2023

◇ Hosted Reddit "Ask me anything" about the evidence for neutrinos from a flaring blazar Jul 2018

◇ IceCube at Wisconsin Science Festival, Wisconsin Institute of Discovery Oct 2016

◇ IceCube at Science Expeditions, Wisconsin Institute for Discovery Apr 2013

◇ Performing astronomy public tours at Biruni Observatory of Shiraz University 2004 – 2005