

Ako Jamil

ASSISTANT PROFESSOR OF PHYSICS · COLORADO STATE UNIVERSITY

✉ ako.jamil@colostate.edu | 🏠 Ako Jamil

EDUCATION

Doctor of Philosophy (Ph.D.) in Physics

Yale University, 2022

THESIS TITLE: RARE EVENT SEARCHES IN LIQUID XENON WITH EXO-200 AND NEXO

ADVISOR: PROF. DAVID MOORE

Master of Philosophy (M.Phil.) in Physics

Yale University, 2021

Master of Science (M.S.) in Physics

Yale University, 2020

Master of Science (M.Sc.) in Physics

FAU, 2017

THESIS TITLE: DEVELOPMENT OF A LARGE AREA SILICON PHOTOMULTIPLIER ARRAY FOR LIGHT DETECTION IN LIQUID XENON

ADVISOR: PROF. GISELA ANTON

Bachelor of Science (B.Sc.) in Physics

FAU, 2014

THESIS TITLE: MESSUNGEN DES EINFLUSSES VON MAGNETFELDERN AUF DAS CHARGE SHARING IN TIMEPIX- UND MEDIPIX-DETEKTOREN

ADVISOR: PD DR. THILO MICHEL

ACADEMIC APPOINTMENTS

Assistant Professor of Physics

Fort Collins, CO, USA

COLORADO STATE UNIVERSITY

Jan. 2027 - Present

Lecturer in Physics

Princeton, NJ, USA

PRINCETON UNIVERSITY

Oct. 2022 - Jan. 2023

Associate Research Scholar (Robert Dicke Postdoctoral Fellow)

Princeton, NJ, USA

PRINCETON UNIVERSITY

Sep. 2022 - Dec. 2026

RESEARCH POSITIONS

Member of the DarkSide-20k Executive and Institutional Boards

Princeton University

DARKSIDE-20K COLLABORATION

Jun. 2025 - Present

Technical Coordinator of the DarkSide-20k Detector Subproject (L2)

Princeton University

DARKSIDE-20K COLLABORATION

Jun. 2025 - Present

Manager of the DarkSide-20k Inner Detector Mockup (L3)

Princeton University

DARKSIDE-20K COLLABORATION

Apr. 2023 - Jun. 2025

Fitting Group Coordinator

Yale University

EXO-200 COLLABORATION

Mar. 2020 - Aug. 2022

Graduate Research Assistant

Yale University

EXO-200 AND NEXO COLLABORATIONS

Aug. 2017 - Aug. 2022

Visiting Research Scholar

Stanford University

EXO-200 AND NEXO COLLABORATIONS

May 2016 - Feb. 2017

Graduate Research Assistant

EXO-200 AND NEXO COLLABORATIONS

ECAP

Jan. 2015 - Apr. 2016

Undergraduate Research Assistant

COBRA COLLABORATION

ECAP

Nov. 2013 - Dec. 2014

HONORS & AWARDS

2022-2026	Robert Dicke Postdoctoral Fellowship , Princeton University
2022	Grainger Postdoctoral Fellowship , The University of Chicago (Declined)
2020	DOE Graduate Instrumentation Research Award , Honorable Mention
2015	BaCaTeC , Travel and Research Grant
2015-2017	Studienstiftung (German Academic Scholarship Foundation) , Scholarship
2015	German Academic Exchange Service (DAAD) , PROMOS Scholarship (Declined)

SELECTED PUBLICATIONS

A Tonne-Scale Demonstrator for the DarkSide-20k Inner Detector

A. JAMIL ET AL., IN PREPARATION

Impact of extreme ultraviolet radiation on the scintillation of pure and xenon-doped liquid argon

P. AGNES ET AL., PHYS.REV.D 111 (2025) 10, 102001

Benchmarking the design of the cryogenics system for the underground argon in DarkSide-20k

F. ACERBI ET AL., JINST 20 P02016 (2025)

Search for MeV Electron Recoils from Dark Matter in EXO-200

S. AL KHARUSI ET AL., PHYS. REV. D 107, 012007 (2023)

nEXO: Neutrinoless double beta decay search beyond 10^{28} year half-life sensitivity

G. ADHIKARI ET AL., J. PHYS. G: NUCL. PART. PHYS. 49 015104 (2022)

Kilotonne-scale xenon detectors for neutrinoless double beta decay and other new physics searches

A. AVASTHI ET AL., PHYS. REV. D 104, 112007 (2021)

VUV-sensitive Silicon Photomultipliers for Xenon Scintillation Light Detection in nEXO

A. JAMIL ET AL., IEEE TRANS.NUCL.SCI. 65 (2018) NO.11

Distributed Imaging for Liquid Scintillation Detectors

J. DALMASSON ET AL., PHYS. REV. D 97, 052006 (2018)

Influence of magnetic fields on charge sharing caused by diffusion in medipix detectors with a Si sensor

A. JAMIL ET AL., NUCL. INSTRUM. METH. A 810 (2016) 19-26

PRESENTATIONS

The Search for Dark Matter using Underground Argon

UNIVERSITY OF ALBERTA PHYSICS COLLOQUIUM

Invited Talk

September 2026

Searching for Dark Matter and Majorana Neutrinos with Underground Liquid Argon

UC RIVERSIDE PHYSICS SEMINAR

Invited Talk

April 2026

Searching for Dark Matter and Majorana Neutrinos with Underground Liquid Argon

COLORADO STATE UNIVERSITY PHYSICS COLLOQUIUM

Invited Talk

February 2026

Sidereal Modulation Signatures in SiPMs: A Novel Path to Light Dark Matter Detection APS GLOBAL PHYSICS SUMMIT 2026	<i>Contributed Talk</i> March 2026
The DarkSide Program: Searches for Dark Matter with Liquid Argon TPCs 12TH INTERNATIONAL SYMPOSIUM ON LARGE TPCs	<i>Invited Plenary Talk</i> December 2025
The Search for Dark Matter using Underground Argon LIGHT DETECTION IN NOBLE ELEMENTS (LIDINE 2025)	<i>Invited Plenary Talk</i> October 2025
A Tonne-scale Demonstrator of The DarkSide-20k Inner Detector TAUP 2025	<i>Invited Talk</i> August 2025
The DarkSide-20k Experiment and the Search for Dark Matter with Underground Argon UCLA DARK MATTER 2025	<i>Invited Talk</i> March 2025
The DarkSide-20k Experiment and the Search for Dark Matter with Underground Argon APS GLOBAL PHYSICS SUMMIT 2025	<i>Contributed Talk</i> March 2025
Cherenkov Light Separation in LXe for Improved Background Rejection WORKSHOP ON XE DETECTOR ONBB SEARCHES: STEPS TOWARDS THE KILOTONNE SCALE	<i>Contributed Talk</i> October 2023
The Search for Dark Matter in Liquid Argon with DarkSide-20k LEPTON INTERACTIONS WITH NUCLEONS AND NUCLEI, 2023	<i>Invited Plenary Talk</i> September 2023
Search for $0\nu\beta\beta$ beyond 10^{28} years half-life sensitivity with nEXO CONFERENCE ON SCIENCE AT THE SANFORD UNDERGROUND RESEARCH FACILITY	<i>Invited Plenary Talk</i> May 2022
Search for Neutrinoless Double Beta Decay with EXO-200 CONFERENCE ON SCIENCE AT THE SANFORD UNDERGROUND RESEARCH FACILITY	<i>Invited Talk</i> May 2022
Light and Charge Transport in Liquid Xenon Detectors for Rare Event Searches PRINCETON DICKE SEMINAR	<i>Invited Talk</i> December 2021
Search for Dark Matter in Liquid Xenon using EXO-200 FALL MEETING OF THE DIVISION OF NUCLEAR PHYSICS OF THE APS	<i>Contributed Talk</i> October 2021
Modeling the Effect of Impurities on the Electron Lifetime in Liquid Xenon for nEXO LIGHT DETECTION IN NOBLE ELEMENTS (LIDINE 2021)	<i>Contributed Talk</i> September 2021
nEXO: Search for $0\nu\beta\beta$ at the Tonne Scale TAUP 2021	<i>Contributed Talk</i> August 2021
Sensitivity and Discovery Potential of the nEXO Experiment to $0\nu\beta\beta$ THE 28TH INTERNATIONAL WORKSHOP ON WEAK INTERACTIONS AND NEUTRINOS	<i>Contributed Poster</i> June 2021
Sensitivity and Discovery Potential of the nEXO Experiment to $0\nu\beta\beta$ in Xe-136 APS APRIL MEETING 2021	<i>Contributed Talk</i> April 2021
Large Area SiPMs for Tonne-scale $0\nu\beta\beta$ CPAD INSTRUMENTATION FRONTIER WORKSHOP 2021	<i>Invited Plenary Talk</i> March 2021
Development of an Impurity Model for Large Liquid Xenon Detectors THE XXIX INTERNATIONAL CONFERENCE ON NEUTRINO PHYSICS AND ASTROPHYSICS	<i>Contributed Poster</i> June 2020
Modeling the Effect of Impurities on the Electron Lifetime in Liquid Xenon for nEXO APS APRIL MEETING 2020	<i>Contributed Talk</i> April 2020
Light Detection with VUV-sensitive SiPMs in nEXO APS APRIL MEETING 2019	<i>Contributed Talk</i> April 2019
The Search for Majorana Neutrinos with nEXO WIDG SEMINAR, WRIGHT LAB, YALE UNIVERSITY	<i>Invited Talk</i> October 2019

OUTREACH AND SERVICE

EPJC Journal

REVIEWER FOR THE EUROPEAN PHYSICAL JOURNAL C

*Mar. 2025 - Present***6th International Workshop on New Photon-Detectors***Vancouver, BC, Canada*

CO-ORGANIZER

Nov. 2024

Topical conference on recent developments in the field of photon detection.

MDPI Journal

REVIEWER FOR THE MDPI JOURNAL

*Mar. 2024 - Present***Gran Sasso Summer School***LNGS, Italy*

LECTURER

June 2023-2025

Series of daily lectures on the particle physics, statistics, semi-conductors, dark matter and the science program of DarkSide-20k. Attendees of this school are from underrepresented backgrounds from US colleges.

Physics Department, Princeton University*Princeton, NJ, USA*

MENTOR IN THE PRINCETON PHYSICS MENTORSHIP PROGRAM

Sep. 2022 - Present

Bi-weekly mentorship meetings with a small group of undergraduate students to discuss matters related to research, graduate school, and academia in general.

nEXO Collaboration*nEXO Collaboration*

MEMBER OF THE NEXO DIVERSITY, EQUITY AND INCLUSION (DEI) COMMITTEE

Jan. 2021 - Jul. 2022

Led the nEXO Junior Scientist Visibility sub-committee where I coordinated and organized opportunities for junior members of the collaboration to present their research in a collaboration-wide setting. Participated in the nEXO Undergraduate Mentorship program to help undergrads navigate their career in physics.

Physics Department, Yale University*New Haven, CT, USA*

MEMBER OF THE GRADUATE STUDENT ADVISORY COMMITTEE

Feb. 2020 - Jan. 2021

As graduate student representatives we advise the DGS and the chair of the Physics Department in subjects related to the graduate program, DEI and other issues in the physics department during monthly meetings.

Pathways to Science*New Haven, CT, USA*

HOURLONG ZOOM SESSION ON THE PHYSICS OF LIGHT

*Jul. 2020***Wright Laboratory, Yale University***New Haven, CT, USA*

GRADUATE STUDENT AND POSTDOC SEMINAR CO-COORDINATOR

Aug. 2019 - Jul. 2021

Organizer of the Weak-Interaction-Discussion-Group (WIDG) Seminar at Wright Lab. This is a bi-weekly seminar series where graduate students and postdocs are able to give an extended talk about their research.

CT SEED: Students Exploring Engineering Day*New Haven, CT, USA*

VOLUNTEERING FOR ANNUAL CT SEED

*Oct. 2018***Yale Physics Olympics***New Haven, CT, USA*

VOLUNTEERING FOR ANNUAL YALE PHYSICS OLYMPICS

*2018 - 2019***German Physical Society (DPG), Physics for Refugees***Erlangen, Germany*

SUPERVISING AND DESIGNING PHYSICS LABS FOR REFUGEES WITH A COLLEGE BACKGROUND

*Mar. 2016 - May 2016***Workers' Welfare Organization (AWO)***Nuremberg, Germany*

MENTORING AND TEACHING REFUGEES FROM SYRIA ON WEEKENDS

Feb. 2015 - May 2016

MENTORING

Sum. 2026	George Prior , Graduate Student, '30, University of Oxford (At UofA)	Princeton University
Sum. 2026	Alex Barlow-Hall , Undergraduate, '28, Lancaster University (At UofA)	Princeton University
Sum. 2026	Emily Rose , Undergraduate, '28, Lancaster University (At UofA)	Princeton University
Sum. 2026	Collin Wilczynski , Undergraduate, '28, Augustana University (At UofA)	Princeton University
Sum. 2026	Aria Gao , Undergraduate, '30, Princeton University (Remote)	Princeton University
2025-2026	Michael Bedard , Graduate Student, '30, Princeton University (At UofA)	Princeton University
2025	Aman Dutta , Undergraduate, '28, Princeton University (Remote)	Princeton University
Sum. 2025	Rosie Harris , Undergraduate, '27, Williams College (At LNGS)	Princeton University
Sum. 2025	Farris Farouki , Undergraduate, '27, Williams College (At LNGS)	Princeton University
Sum. 2025	Olivia Thornton , Undergraduate, '27, Williams College (At LNGS)	Princeton University
Sum. 2024	Taiyuan Lu , Undergraduate, '25, USTC (At LNGS)	Princeton University
Sum. 2024	Celin Hidalgo , Postbac Student, Princeton University (At LNGS)	Princeton University
Sum. 2024	Matthew Cooperberg , Undergraduate, '27, Princeton University (At LNGS)	Princeton University
Sum. 2024	Jason Liu , Undergraduate, '26, Williams College (At LNGS)	Princeton University
Sum. 2024	Alexia King , Undergraduate, '26, Williams College (At LNGS)	Princeton University
Sum. 2024	Jared Stiller , Undergraduate, '25, Williams College (At LNGS)	Princeton University
Sum. 2024	Sydney Ghorayeb , Undergraduate, '26, Williams College (At LNGS)	Princeton University
2024-2025	Oliver MacFadyen , Graduate Student, '25, RHUL (At LNGS)	Princeton University
2023-2025	Paolo Salomone , Graduate Student, '25, Sapienza University (At LNGS)	Princeton University
2022-2023	Allan Sung , Graduate Student, '25, Princeton University	Princeton University
2021-2022	Molly Watts , Graduate Student, '26	Yale University
2021-2022	Glenn Richardson , Graduate Student, '26	Yale University
2020-2022	Sierra Wilde , Graduate Student, '26, Yale University	Yale University
2021-2022	Barkotel Zemenu , Undergraduate, '24, Yale University	Yale University
2020-2021	Zixin Chen , Undergraduate, '23, Yale University	Yale University
2020-2021	Alex Lathem , Undergraduate, '21, Yale University	Yale University
2019	Lukas Baker , Undergraduate, '20, Yale University	Yale University
2019-2020	Samuel Borden , Undergraduate, '20, Yale University	Yale University
2018	Charlotte Kavalier , Undergraduate, '21, Yale University	Yale University
2015	Daniel Voigt , Bachelor Student, '16, FAU	FAU
2015	Judith Schneider , Bachelor Student, '15, FAU	FAU

TEACHING

Fall 2022	PHY 209 , Computational Physics Seminar, Instructor	Princeton University
Spring 2022	PHYS 678 , Computing for Scientific Research, Teaching Assistant	Yale University
Fall 2021	PHYS 524 , Introduction to Nuclear Physics, Teaching Assistant	Yale University
Spring 2021	PHYS 206L , Modern Physical Measurement, Teaching Assistant	Yale University
Fall 2020	PHYS 524 , Introduction to Nuclear Physics, Teaching Assistant	Yale University
Spring 2020	PHYS 430 , Electromagnetic Fields and Optics, Teaching Assistant	Yale University

Fall 2019	PHYS 205L , Modern Physical Measurement, Teaching Assistant	<i>Yale University</i>
Spring 2019	PHYS 166 , General Physics Laboratory, Head Teaching Assistant	<i>Yale University</i>
Fall 2018	PHYS 165 , General Physics Laboratory, Head Teaching Assistant	<i>Yale University</i>
Spring 2018	PHYS 166 , General Physics Laboratory, Teaching Assistant	<i>Yale University</i>
Fall 2017	PHYS 165 , General Physics Laboratory, Teaching Assistant	<i>Yale University</i>
Spring 2015	EP-5 , Nuclear and Particle Physics, Teaching Assistant	<i>FAU</i>
Fall 2014	EP-2 , Electrodynamics and Thermodynamics, Teaching Assistant	<i>FAU</i>

REFERENCES

Prof. Cristiano Galbiati , Princeton University (Postdoc advisor)	<i>galbiati@princeton.edu</i>
Prof. Jocelyn Monroe , University of Oxford	<i>jocelyn.monroe@physics.ox.ac.uk</i>
Prof. David Moore , Yale University (PhD advisor)	<i>david.c.moore@yale.edu</i>
Prof. Luca Grandi , The University of Chicago	<i>lgrandi@uchicago.edu</i>
Prof. Elena Aprile , Columbia University	<i>ea18@columbia.edu</i>
Prof. Aksel Hallin , University of Alberta	<i>aksel.hallin@ualberta.ca</i>
Prof. Giorgio Gratta , Stanford University	<i>gratta@stanford.edu</i>
Prof. Gisela Anton , University of Erlangen-Nuremberg (Master's advisor)	<i>gisela.anton@fau.de</i>

SKILLS

Languages	English, German, Kurdish
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