

Session Program

11-13 May 2026



Phenomenology 2026 Symposium

Dark Matter

University of Pittsburgh

Monday 11 May

14:15

Dark Matter: DM at Colliders

Session | Location: David Lawrence Hall 120, University of Pittsburgh

14:15-14:30

Searches for BSM physics using challenging and long-lived signatures with the ATLAS detector

Speaker

Michael Revering

14:30-14:45

Leptonically rich confining dark sectors from dark hadronization: recasting an ATLAS four-lepton analysis

Speaker

Junyi Cheng

14:45-15:00

Recent highlights of dark matter searches from CMS

Speaker

Murtaza Safdari

15:00-15:15

CMS Run-2 search for a boosted dark Higgs boson decaying into a bottom quark-antiquark pair

Speaker

Erdem Yigit Ertorer

15:15-15:30

Probing Freeze-In Dark Matter via a Spin-2 Portal at the LHC with Vector Boson Fusion and Machine Learning

Speaker

Junzhe Liu

15:30-15:45

Boosting Dark Matter with the LHC Beam: A New Forward Signature

Speaker

Andrew Evans

15:45-16:00

Search for Sub-GeV Axion-Like Particles at EBES Pilot Run

Speaker

Tomoya Iizawa

16:00

16:30

Dark Matter: Direct Detection

Session | Location: David Lawrence Hall 120, University of Pittsburgh

16:30-16:45

Latest Results of the LUX-ZEPLIN (LZ) Dark Matter Experiment

Speaker

Jack Genovesi

16:45-17:00

AI-Driven Material Discovery in a Pipeline to Develop DM Detectors

Speaker

Carlos Blanco

17:00-17:15

Sub-GeV Dark Matter Detection with Dark Rates in Liquid Scintillators**Speaker**

Lillian Santos-Olmsted

17:15-17:30

Dark matter-electron scattering with RPA dielectric screening**Speaker**

Megan Hott

17:30-17:45

Strategies for Next-Generation sub-GeV Direct Detection**Speaker**

Benjamin Lillard

17:45-18:00

Dive deeper with SUBMARINE: SUB-Mev dArk matter diRect detection using bilayer graphENE**Speaker**

Anuvab Sarkar

18:00-18:15

Millicharged Particle Direct Detection Using Optimized Ion Traps**Speaker**

Jonathan Shoemaker

18:15-18:30

Cavendish Searches for Millicharged Particles**Speaker**

Zachary Bogorad

18:30

16:30

Dark Matter: Theory

Session | Location: David Lawrence Hall 209, University of Pittsburgh

16:30-16:45

Dark Matter during First-Order Phase Transitions**Speaker**

Peisi Huang

16:45-17:00

WIMPs with Enhanced Annihilation from a Feebly Interacting Unstable Partner**Speaker**

Chance Hoskinson

17:00-17:15

Accidentally Stable Dark Matter in a Parity Solution to the Strong CP Problem**Speaker**

Matthew Baldwin

17:15-17:30

Reviving WIMP dark matter with temperature-dependent couplings**Speaker**

Dr Debasish Borah

17:30-17:45

Freeze-in Dark Matter in Neutron Stars

Speaker
Samya Roychowdhury

17:45-18:00 Singlet Doublet Model Outside of Chemical Equilibrium

Speaker
Alexander Takla

18:00-18:15 Questions on Fuzzy Dark Matter

Speaker
Sunhaeng Hur

18:15-18:30 Secluded effects on scalar light dark matter

Speaker
Lilianna Hariasz

18:30

Tuesday 12 May

14:00

Dark Matter: Axions

Session | Location: David Lawrence Hall 120, University of Pittsburgh

14:00-14:15 **Berry Phase in Axion Physics and Its Applications**

Speaker
Shuailiang Ge

14:15-14:30 **WIMP Meets ALP: Coherent Freeze-Out of Dark Matter**

Speaker
Bingrong Yu

14:30-14:45 **Geo-Axion Searches in Neutrino Detectors**

Speaker
Anirudh Chandra Shekar

14:45-15:00 **The Challenges of Detecting Non-Classical Axions**

Speaker
Joseph Takach

15:00-15:15 **Axion Production and Detection Using a Dual NMR-type Experiment**

Speaker
Qiushi Wei

15:15-15:30 **Cosmic Axion Background Detection Using Resonant Cavity Arrays**

Speaker
Soobeom Chung

15:30-15:45

Quantum Semiconductor Heterostructures for meV Axion Dark Matter Detection

Speaker
Jaanita Mehrani

15:45-16:00 **Learning Loss Functions**

Speaker
Bethany Suter

16:00

16:30

Dark Matter: Astrophysics

Session | Location: University of Pittsburgh

16:30-16:45

Machine Learning Does It and Does It Better: Unearthing Primordial Dark-Matter Velocities from the Matter Power Spectrum

Speaker
Brooks Thomas

16:45-17:00 **X-ray femtolensing probes asteroid-mass black holes**

Speaker

Benjamin Lehmann

17:00-17:15

Structure Formation with Dark Magnetohydrodynamics

Speaker

Pierce Giffin

17:15-17:30

Set the Night on FIRE: Building an Empirical Local Dark Matter Velocity Distribution

Speaker

Xiuyuan Zhang

17:30-17:45

Jupiter is a Dark Matter Refrigerator: Electron Degeneracy Inhibits Evaporation

Speaker

Tran Quang Thong Nguyen

17:45-18:00

Screened Forces in a QCD-Like Dark Sector on Galactic Scales

Speaker

Mathilda Denison

18:00-18:15

First-Order QED Corrections to the Electron Spectrum of Hawking Radiation from Asteroid-Mass Primordial Black Holes: Formalism and Numerical Evaluation of Dissipative Interactions

Speaker

Bowen Chen

18:15-18:30

Searching for Ultralight Scalar Dark Matter with Clocks in Low Earth Orbit

Speaker

Dawid Brzeminski

18:30

16:30

Dark Matter: Indirect Detection

Session | **Location:** David Lawrence Hall 120, University of Pittsburgh

16:30-16:45

Explanation of Galactic Center GeV Excess via Cosmic Ray-Dark Matter Scattering

Speaker

Debopam Goswami

16:45-17:00

Stress-Testing the 20 GeV Excess

Speaker

Eve Schoen

17:00-17:15

Enhanced Cosmic-Ray Antinuclei Fluxes with Dark Matter Annihilation into SUEPs

Speaker

Caleb Gemmell

17:15-17:30

X-rays from Inelastic Dark Matter Freeze-in

Speaker

Riku Mizuta

17:30-17:45

Joint Spatial-Spectral Gaussian Process Modeling of the Galactic Center Excess**Speaker**

Sam Huang

17:45-18:00

AXIS Can Access Dark Matter Decays**Speaker**

Nimrod Shapir

18:00-18:15

Enhancing Cosmic-Ray Antinuclei Fluxes from Dark Matter using Baryon Number**Speaker**

Fabrizio Vassallo

18:15-18:30

BBN constraints on the hadronic annihilation of sub-GeV dark matter**Speaker**

Afif Omar

18:30