

Session Program

13-17 May 2024



DPF - PHENO 2024

Dark Matter

University of Pittsburgh / Carnegie Mellon University

Sunday 12 May

14:00

Dark Matter: DM at accelerators

Session | **Location:** University of Pittsburgh, David Lawrence Hall 104 | **Convener:** Mudit Rai

14:00-14:15 **Implications of purity constraints on light higgsinos**

Speaker
Stephen Martin

14:15-14:30 **Search for emerging jets**

Speaker
Claire Savard

14:30-14:45 **Discovering Minimal Dark Matter at Muon Colliders**

Speaker
Rodolfo Capdevilla

14:45-15:00 **Light Dark Portals at a High Energy Muon Collider**

Speaker
Sagar Airen

15:00-15:15 -

15:15-15:30 --

15:30

14:00

Dark Matter: Direct Detection

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

14:00-14:15 **New Techniques in Dark Matter Direct Detection**

Speaker
Ben Lillard

14:15-14:30 **Cosmic Ray Boosted Dark Matter at IceCube**

Speaker
Christopher Cappiello

14:30-14:45 **Boosted Dark Matter Resonant Scattering**

Speaker
Zachary Orr

14:45-15:00

A Global Fit of Non-Relativistic Effective Dark Matter Operators Including Solar Neutrinos

Speaker
Neal Avis Kozar

15:00-15:15 **Detecting Rare Species of Dark Matter with Terrestrial Detectors**

15:30

16:00

17:30

16:00

Speaker
Anupam Ray

15:15-15:30 Optimal antiferromagnets for dark matter detection

Speaker
Shashin Pavaskar

Dark Matter: DM at accelerators

Session | **Location:** University of Pittsburgh, David Lawrence Hall 104 | **Convener:** Brooks Thomas

16:00-16:15

Search for dark photons decaying to lepton jets with the CMS experiment

Speaker
Prof. Paul Karchin

16:15-16:30

Search for Dark Matter Produced in Association with a Resonant Bottom-Quark Pair

Speaker
Erdem Yigit Ertorer

16:30-16:45

Dark Matter searches with photons at the LHC

Speaker
Subhojit Roy

16:45-17:00

Status of, and recent data results from, the LHC Run 3 milliQan detector

Speaker
Matt Joyce

17:00-17:15

New Physics Results from the FASER Experiment

Speaker
Ansh Sameer Desai

17:15-17:30

The Light Dark Matter eXperiment (LDMX)

Speaker
Jessica Pascadlo

Dark Matter: Direct Detection

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

16:00-16:15

Shining Light on the Dark Matter Problem With LZ

Speaker
Matthew Szydagis

16:15-16:30

The Photo Detection Units of the DarkSide-20k experiment for WIMPs direct detection

Speaker
Pablo Kunze

16:30-16:45

The Migdal Effect in Semiconductors for the Effective Field Theory of Dark Matter Direct Detection

Speaker

Megan McDuffie

16:45-17:00

(Super)heavy Z' -Portal Dark Matter Scenario and Complementarity between Direct Dark Matter Detection Experiments and Z' Boson Searches at the LHC

Speaker

PUJA DAS

17:00-17:15

Multiphonon Processes in Spin-Dependent Dark-Matter Scattering

Speaker

Bethany Suter

17:15-17:30

-

17:30

Monday 13 May

14:00

Dark Matter: Model Building

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

14:00-14:15 Probing Heavy Asymmetric Dark Matter with the Glashow Resonance

Speaker
Qinrui Liu

14:15-14:30 Phase Transition of Conformal Freeze-In Dark Matter

Speaker
Lillian Luo

14:30-14:45 Pure Glue Dark Sector Cosmology

Speaker
Riku Mizuta

14:45-15:00 Forbidden Conformal Dark Matter at a GeV

Speaker
Steven Ferrante

15:00-15:15
Recycling: A New Mechanism for Producing Ultra Heavy Particle Dark Matter

Speaker
Thomas Gehrman

15:15-15:30 Higgsino Signals from White Dwarfs in the Inner Galaxy

Speaker
Javier Fernández Acevedo

15:30

14:00

Dark Matter: ULDM

Session | Location: University of Pittsburgh, David Lawrence Hall 104 | Convener: Erwin Tanin

14:00-14:15 MagLev for Dark Matter

Speaker
Zhen Liu

14:15-14:45 -

14:45-15:00 Probing (ultra-) light Dark Matter Using Mössbauer Spectroscopy

Speaker
Abhishek Banerjee

15:00-15:15 Electron Trap as a meV Axion and Dark Photon Dark Matter Detector

Speaker
Yawen Xiao

15:15-15:30 Atom interferometer detection of dark matter

15:30	<div><div>Speaker</div><div>Yufeng Du</div></div>
16:00	<div><div><div>Dark Matter: Model Building</div><div>Session Location: University of Pittsburgh, David Lawrence Hall 120 Conveners: Julian Heeck, Julian Heeck</div></div><div><div><div>16:00-16:15</div><div>Weaker gravity and thermal relic abundance</div><div><div>Speaker</div><div>Matthew Sullivan</div></div></div><div><div><div>16:15-16:30</div><div>The Power of the Dark Sink</div><div><div>Speaker</div><div>Robert McGehee</div></div></div><div><div><div>16:30-16:45</div><div>Indirect searches for dark matter in the time domain</div><div><div>Speaker</div><div>Ngan Nguyen</div></div></div><div><div><div>16:45-17:00</div><div>Signals of ALP-Mediated Dark Matter and its UV Completions</div><div><div>Speaker</div><div>John Coffey</div></div></div><div><div><div>17:00-17:15</div><div>QCD Axion-mediated Dark Matter</div><div><div>Speaker</div><div>Pankaj Munbodh</div></div></div><div><div><div>17:15-17:30</div><div>-</div></div></div></div></div></div></div></div></div>
17:30	

Tuesday 14 May

14:00

Dark Matter: PBH and Atomic DM

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

14:00-14:15

Close encounters of the primordial kind: a new observable for primordial black holes as dark matter

Speaker

Benjamin Lehmann

14:15-14:30

Feedback in the dark: a critical examination of CMB bounds on primordial black holes

Speaker

Gregory Suczewski

14:30-14:45

Dissipative Dark Matter in a Slow Cooker: Delayed Dark Clumps and Primordial Black Holes

Speaker

J. Leo Kim

14:45-15:00

Constraining atomic dark matter with the high-redshift UV luminosity function

Speaker

Jared Barron

15:00-15:15

Atomic Dark Matter Capture in the Earth

Speaker

Keegan Humphrey

15:15-15:30

Lyman-alpha Constraints on Atomic Dark Matter with N-body Simulation

Speaker

Linda Yuan

15:30

16:00

Dark Matter: Astrophysical Probes

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

16:00-16:15

Probing the pulsar explanation of the Galactic-Center GeV excess using continuous gravitational-wave searches

Speaker

Yue Zhao

16:15-16:30

Optimal Celestial Bodies for Dark Matter Detection

Speaker

Joshua Tong

16:30-16:45

Effects of low boosted dark matter annihilation on galactic signals**Speaker**

Steven Clark

16:45-17:00

Dark Kinetic Heating of Exoplanets and Brown Dwarfs**Speaker**

Aidan Reilly

17:00-17:15

Milky Way White Dwarfs as Sub-GeV to Multi-TeV Dark Matter Detectors**Speaker**

Lillian Santos-Olmsted

17:15-17:30

Constraining bosonic asymmetric dark matter with neutron star mass-radius measurements**Speaker**

Nathan Rutherford

17:30

Wednesday 15 May

14:00

Dark Matter: ULDM and Freeze-in

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

14:00-14:15

Dark Matter Searches on a Photonic Chip

Speaker

Christina Gao

14:15-14:30

Boosted Dark Photons - Looking for Light Dark Matter with Dark Light

Speaker

R. Andrew Gustafson

14:30-14:45

Thermal effects in freeze-in neutrino dark mater production

Speaker

Dr Michele Lucente

14:45-15:00

Dark Matter Production During Warm Inflation via Freeze-In

Speaker

Barmak Shams Es Haghi

15:00-15:15

Freeze-in Cogenesis of Asymmmetric Dark Matter

Speaker

Michael Shamma

15:15-15:30

Majoron echoes of Leptogenesis

Speaker

Swapnil Dutta

15:30

16:00

Dark Matter: WIMPs, DM Simulation and ML

Session | **Location:** University of Pittsburgh, David Lawrence Hall 120 | **Convener:** Barmak Shams Es Haghi

16:00-16:15

A WIMP Status Report: Constraints and Discovery Prospects for Singlet-Doublet Dark Matter

Speaker

Evan Petrosky

16:15-16:30

The Inner Dark Matter Distribution in Hydrodynamic Simulations

Speaker

Abd El Aziz Hussein

16:30-16:45

Kinetic Simulations of Collisionless Shock Formation in the Dark Sector

Speaker

Pierce Giffin

16:45-17:00

Sweeping the Dust Away: An unbiased map of the Milky Way's gravitational potential using unsupervised ML

Speaker

Eric Putney

17:00-17:30

-

17:30