

Session Program

13-17 May 2024



DPF - PHENO 2024

Physics Beyond the Standard Model

University of Pittsburgh / Carnegie Mellon University

Monday 13 May

14:00

Physics Beyond the Standard Model: SUSY searches at the LHC

Session | Location: University of Pittsburgh, David Lawrence Hall 106 | Convener: Zhen Liu

14:00-14:15

Exploring the Natural Anomaly-Mediated Supersymmetry Breaing Landscape at the HL-LHC

Speaker
Jessica Bolich

14:15-14:30

Searching for top squarks from the string landscape at HL-LHC

Speaker
Juhi Dutta

14:30-14:45

CMS results for searches for SUSY in compressed mass scenarios

Speaker
Alice Bean

14:45-15:00

Search for chargino pair-production and chargino-neutralino production with R -Parity Violating decays in pp collisions at $\sqrt{s} = 13$ TeV with ATLAS

Speaker
Bobby McGovern

15:00-15:15

A search for R-Parity Violating supersymmetry through top squark pair production in $\sqrt{s} = 13$ TeV pp collisions with the ATLAS experiment

Speaker
Lauren Melissa Osojnak

15:15-15:30

Winos from natural SUSY at the high luminosity LHC

Speaker
KAIRUI ZHANG

15:30

16:00

Physics Beyond the Standard Model: SUSY and SMEFT

Session | Location: University of Pittsburgh, David Lawrence Hall 106 | Convener: Kirtimaan Ajaykant Mohan

16:00-16:15

Higher-order corrections to top-quark pair production in the SMEFT

Speaker
Dr Alberto Tonerò

16:15-16:30

Precision unification and the scale of supersymmetry

Speaker
Prudhvi Bhattiprolu

16:30-16:45

Dimension-eight Operator Basis for Universal Standard Model Effective Field Theory

Speaker
Jay Desai

16:45-17:00 Dipole Operator in Standard Model Effective Theory

Speaker
Si Wang

17:00-17:15 Opening up baryon number violating operators

Speaker
Diana Sokhashvili

17:15-17:30

An alternative form of supersymmetry with reduced cross-sections and modified experimental signatures

Speaker
Roland Allen

17:30

Tuesday 14 May

14:00

Physics Beyond the Standard Model: LHC Search Results

Session | **Location:** University of Pittsburgh, David Lawrence Hall 106 | **Convener:** Ian Lewis

14:00-14:15

Search for new resonances decaying to pairs of highly merged diphotons in proton-proton collisions at 13 TeV with the CMS detector

Speaker
Steven Clark

14:15-14:30

Search for soft unclustered energy patterns in proton-proton collisions at 13 TeV

Speaker
Luca Lavezzo

14:30-14:45

Search For Low-Mass Quark-Antiquark Resonances Produced With an Initial State Photon at 13 TeV Using the CMS Detector

Speaker
Adam Albert Kobert

14:45-15:00

Search for t-channel leptoquark production in the high mass dimuon and dielectron spectra

Speaker
Sanjana Sekhar

15:00-15:15

Search for long-lived charged particles using the CMS detector in Run 2

Speaker
Petar Maksimovic

15:15-15:30

Searches for long-lived particles and other non-conventional signatures with the CMS tracker and calorimeter systems

Speaker
Kiley Elizabeth Kennedy

15:30

16:00

Physics Beyond the Standard Model: Neutrinos, Leptogenesis and Baryogenesis

Session | **Location:** University of Pittsburgh, David Lawrence Hall 106 | **Convener:** Christopher Cappiello

16:00-16:15

Higgs-Coupled Freeze-In Baryogenesis

Speaker
David Tucker-Smith

16:15-16:30

Baryon Number Violation in Neutron Stars and the Lab

Speaker

Adrian Thompson

16:30-16:45

Collider testable leptogenesis

Speaker

Yannis Georis

16:45-17:00

Simulating Heavy Neutral Leptons with General Couplings at Forward Collider Experiments

Speaker

Alec Hewitt

17:00-17:15

Utilizing the Iron Dump at Short Baseline Neutrino Facilities to Probe Heavy Neutral Lepton and Dark Matter

Speaker

Debopam Goswami

17:15-17:30

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17:30

Wednesday 15 May

14:00

Physics Beyond the Standard Model: Charged Higgs Searches Session Location: University of Pittsburgh, David Lawrence Hall 106 Convener: Prudhvi Bhattiprolu	
14:00-14:15	-
14:15-14:30	Doubly-charged scalar from the right-handed sector: complementary tests from $\beta\beta$ decay, parity-violating Møller scattering, and colliders Speaker Sebastián Urrutia Quiroga
14:30-14:45	Reinterpretation of the ATLAS Dark Meson analysis for Charged Higgs in the two-Higgs-doublet model Speaker Anni Xiong
14:45-15:00	Results from H^+ to tau nu in ATLAS using the full run2 dataset Speaker Juan Carlos Cardenas Jr
15:00-15:15	-
15:15-15:30	-

15:30

16:00

Physics Beyond the Standard Model: Strong CP Problem and Hidden Valleys Session Location: University of Pittsburgh, David Lawrence Hall 106 Convener: Ben Lillard	
16:00-16:15	Chiral Nelson-Barr Models: Quality and Cosmology Speaker Samuel Homiller
16:15-16:30	Parity solution to the Strong CP-problem within Pati-Salam Model Speaker Mr Sumit Biswas
16:30-16:45	Nelson Barr ultra light dark matter Speaker Wolfram Ratzinger
16:45-17:00	EW Portal to the Hidden Valley Speaker LINGFENG LI
17:00-17:15	Exploring near-conformal Hidden Valley theories

Speaker
Joshua Lockyer

17:15-17:30 Jet SIFT-ing for New Physics in a Hidden Valley

Speaker
Camryn Sanders

17:30

Thursday 16 May

14:00

Physics Beyond the Standard Model: Holography, Extra-Dimensions & Amplitudes

Session | **Location:** University of Pittsburgh, David Lawrence Hall 106 | **Convener:** Dr Zhengkang Zhang

14:00-14:15 **Vector-Pair Production, The Amplitude Way**

Speaker

Jared Goldberg

14:15-14:30

Scattering Amplitudes of Massive Spin-2 Kaluza-Klein States with Matter

Speaker

Kirtimaan Ajaykant Mohan

14:30-14:45

Equivalence theorems for KK gravitons in warped five-dimensional theories

Speaker

Xing Wang

14:45-15:00

Thermodynamics of "Continuous spin" photons

Speaker

Gowri Sundaresan

15:00-15:15

Confining Conformal Colliders: towards QCD energy correlators from holography

Speaker

Ameen Ismail

15:15-15:30

Spin Correlations in Dark Photon Searches

Speaker

Misa Toman

15:30

14:00

Physics Beyond the Standard Model: Long lived particles at colliders

Session | **Location:** University of Pittsburgh, David Lawrence Hall 207 | **Convener:** Carlos Henrique de Lima

14:00-14:15 **Search for long-lived particles using displaced jets at CMS in Run 3**

Speaker

Jingyu Luo

14:15-14:30

Searches for long-lived particles in the CMS muon system

Speaker

Daniel Guerrero

14:30-14:45

Search for displaced vertices of oppositely charged leptons from decays of long-lived particles in p p collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector

Speaker

K.K. Gan

14:45-15:00

The New Physics Case for Beam-Dump Experiments with Accelerated Muon Beams

Speaker

Rikab Gambhir

15:00-15:15

Hunting for Inflaton at Colliders

Speaker

Digesh Raut

15:15-15:30

New Signatures for Color-Sextet Scalars

Speaker

Katherine Schwind

15:30

16:00

Physics Beyond the Standard Model: Collider Physics: current and future

Session | **Location:** University of Pittsburgh, David Lawrence Hall 106 | **Convener:** Wolfram Ratzinger

16:00-16:15

Unconventional Track Signatures at a 10 TeV Muon Collider

Speaker

Leo Rozanov

16:15-16:30

Search for single production of vector-like B quarks decaying to a top quark and a W boson in semi-leptonic final states

Speaker

Xiaohe Shen

16:30-16:45

Probing muon g-2 at forward detectors at LHC

Speaker

Roshan Mammen Abraham

16:45-17:00

A Simplified Model of Heavy Vector Singlets at the LHC and Future Colliders

Speaker

Timothy Martonhelyi

17:00-17:15

Discovering Quirks with Displaced Vertices

Speaker

Joshua Forsyth

17:15-17:30

Double Higgs boson production via photon fusion at muon colliders within the triplet Higgs model

Speaker

Bathiya Samarakoon

17:30

16:00

Physics Beyond the Standard Model: Neutrino Masses and Dark Matter

Session | **Location:** University of Pittsburgh, David Lawrence Hall 209 | **Convener:** Qinrui Liu

16:00-16:15

Multimessenger Probes of First-Order Phase Transitions

Speaker

Cash Hauptmann

16:15-16:30

Predictive Dirac Neutrino Spectrum with Strong CP Solution in $SU(5)_L \times SU(5)_R$ Unification

Speaker

Anil Thapa

16:30-16:45

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16:45-17:00

New Physics searches via scattering at DarkQuest

Speaker

Aparajitha Karthikeyan

17:00-17:30

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17:30