

Session Program

Jun 6 - 10, 2022

**PPC 2022: XV International Conference on
Interconnections between Particle Physics
and Cosmology**

Parallel

Mon, June 6

3:30 PM

Parallel: BSM - Guller (BH 130)

Session | Location: Guller (BH 130) | Convener: Anil Thapa

15:30 - 15:45 **Baryon Number Violation in Neutron Stars**

Speaker

Mohammadreza Zakeri

15:45 - 16:00 **Observable proton decay in Flipped SU(5)**

Speaker

Maria Mehmood

16:00 - 16:15 **Probing the ν_R -philic Z' at DUNE near detectors**

Speaker

Garv Chauhan

16:15 - 16:30

W boson mass, dark matter and $(g-2)_\ell$ in the ScotoZee neutrino mass model

Speaker

Ritu Dcruz

16:30 - 16:45

Correlating W -Boson Mass Shift with Muon $(g-2)$ Anomaly in the 2HDM

Speaker

Vishnu Padmanabhan Kovilakam

16:45 - 17:00

Upper bound on the smuon mass from vacuum stability in the light of muon $g-2$ anomaly

Speaker

So Chigusa

17:00 - 17:15 **Muon $g-2$, Neutralino Dark Matter and Stau NLSP**

Speaker

Amit Tiwari

17:15 - 17:30 **Fermion masses and mixings in 3HDM with S_3 flavor symmetry**

Speaker

Shiyuan Xu

17:30 - 18:00 **Novel Manifestations of Primordial Black Holes**

Speaker

Volodymyr Takhistov

6:00 PM

3:30 PM

Parallel: Collider - Zimring (BH 150)

Session | Location: Zimring (BH 150) | Convener: David Tucker-Smith

15:30 - 15:45 **Toponium at the LHC****Speaker**

Ya-Juan Zheng

15:45 - 16:00 **Cp Violating Top Yukawa at the Multi TeV Muon Collider****Speaker**

Morgan Cassidy

16:00 - 16:15

Machine-Learning quantum entanglement with top quark pair production at the LHC**Speaker**

Zhongtian Dong

16:15 - 16:30 **Heavy Neutral Lepton Searches at the Electron-Ion Collider****Speaker**

Keping Xie

16:30 - 16:45 **Quarkophobic W' for LHC searches****Speaker**

Jose Ruiz

16:45 - 17:00 **Searches for new physics in the final state $B-\tau_{h-p}T^{\text{miss}}$** **Speaker**

Tomas Atehortua Garces

17:00 - 17:15 **Multi-track Displaced Vertices at B-Factories****Speaker**

Albany Blackburn

17:15 - 17:30 **Recent results from Belle II****Speaker**

Jim Cochran

17:30 - 17:45

Muon g-2 and the B-physics anomalies in RPV Supersymmetry and the discovery prospect at LHC**Speaker**

Fang Xu

17:45 - 18:00 **Probing dark sectors with proton bremsstrahlung****Speaker**

Saeid Foroughi-Abari

6:00 PM

3:30 PM

Parallel: Cosmology I - Ling (BH 160)

Session | Location: Ling (BH 160) | Convener: Arnab Dasgupta

15:30 - 15:45 **Beyond Fisher Forecasting for Cosmology**

Speaker

Joseph Ryan

15:45 - 16:00

Revisiting an Early Dark Energy model and the Hubble Tension in a non-flat Universe**Speaker**

Jordan Stevens

16:00 - 16:15

Can Thermal Friction Thaw the Hubble Tension?**Speaker**

Kim Berghaus

16:15 - 16:30

A Hubble parameter estimate $H_0 = (73.37 \pm 0.54)$ km/s/Mpc from the late-time Universe and the BAO**Speaker**

Maurice van putten

16:30 - 16:45

The impact of relative baryon-CDM perturbations on the evolution of Large-Scale Structures**Speaker**

Hasti Khoraminezhad

16:45 - 17:00

Finding Evidence for Inflation and the Origin of Galactic Magnetic Fields with CMB Surveys**Speaker**

Sayan Mandal

17:00 - 17:15

Cosmological collider signatures of massive gauge bosons**Speaker**

Moinul Rahat

17:15 - 17:30

Effects of a Hidden Sector On the Matter Power Spectrum**Speaker**

Himanish Ganjoo

17:30 - 17:45

What does cosmology tell us about the mass of thermal-relic dark matter?**Speaker**

Rui An

17:45 - 18:00

A bound on the unparticle-photon cross section from the CMB temperature**Speaker**

Maryam Aghaei Abchouyeh

6:00 PM

Parallel: Dark Matter I - McGinnis (BH 210)

Session | Location: McGinnis (BH 210) | Convener: Debasish Borah

15:30 - 15:45

Impact of Sommerfeld Effect and Bound State Formation in Simplified t-Channel Dark Matter Models**Speaker**

Mathias Becker

Location

McGinnis (BH 210)

15:45 - 16:00

The Light Dark Matter eXperiment, LDMX**Speaker**

Robert Group

Location

McGinnis (BH 210)

16:00 - 16:15

Dark matter studies with the PADME experiment**Speaker**

Andre Frankenthal

Location

16:15 - 16:30

Maximizing Direct Detection with HYPER Dark Matter**Speaker**

Robert McGehee

Location

McGinnis (BH 210)

16:30 - 16:45

The SABRE South Experiment at the Stawell Underground Physics Laboratory**Speaker**

Madeleine Zurowski

Location

Virtual

16:45 - 17:00

Optimal Pair-finding For Flow Mapping in Liquid Xenon Time Projection Chambers**Speaker**

Jacob Mclaughlin

Location

McGinnis (BH 210)

17:00 - 17:15

Analytic Approximations for the Velocity Suppression of Dark Matter Capture**Speaker**

Jillian Paulin

Location

McGinnis (BH 210)

17:15 - 17:30

Experimental signatures of a new dark matter WIMP

Speaker

Roland Allen

Location

McGinnis (BH 210)

17:30 - 17:45

Kaluza-Klein Portal Matter

Speaker

GEORGE WOJCIK

Location

McGinnis (BH 210)

17:45 - 18:00

Polarized solitons in higher-spin dark matter

Speaker

Mudit Jain

Location

McGinnis (BH 210)

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1:30 PM

Parallel: Dark Matter II - McGinnis (BH 210)

Session | Location: McGinnis (BH 210) | Convener: Peizhi Du

13:30 - 13:45

Phenomenology of the Dark Matter sector in the Two Higgs Doublet Model with Complex Scalar Singlet extension

Speaker

Juhi Dutta

Location

Virtual

13:45 - 14:00

Acausality in Superfluid Dark Matter and MOND-like Theories

Speaker

Neil Shah

Location

McGinnis (BH 210)

14:00 - 14:15

Exploring Fundamental Physics with Atmospheric Collider

Speaker

Volodymyr Takhistov

Location

McGinnis (BH 210)

14:15 - 14:30

On the construction of theories of $Sp(4)$ dark matter

Speaker

Seán Mee

Location

McGinnis (BH 210)

14:30 - 14:45

New production mechanism for keV neutrino dark matter

Speaker

Carlos Jaramillo

Location

McGinnis (BH 210)

14:45 - 15:00

Two-Component Dark Matter (Review)

Speaker

Ali Alnafisah

Location

McGinnis (BH 210)

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1:30 PM

Parallel: Gravitational Waves - Zimring (BH 150)

Session | Location: Zimring (BH 150) | Convener: Vincent Rodgers

13:30 - 13:45

Detecting High-Frequency Gravitational Waves with Microwave Cavities

Speaker

Jan Schütte-Engel

13:45 - 14:00 **Astrometric Gravitational-Wave Detection via Stellar Interferometry****Speaker**

Dr Michael A. Fedderke

14:00 - 14:15 **Traces of a Heavy Field in Gravitational Waves****Speaker**

Dr Keisuke Inomata

14:15 - 14:30

Revisiting gravitational wave background from primordial black holes**Speaker**

Heling Deng

14:30 - 14:45

Gravitational Waves from Early Universe Turbulent Sources at the QCD Scale**Speaker**

Emma Clarke

14:45 - 15:00 **Forecasting detections of gravitational-wave tails from LIGO data****Speaker**

Matthew Carney

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1:30 PM

Parallel: Neutrino - Ling (BH 160)**Session** | **Location:** Ling (BH 160) | **Convener:** Prudhvi Bhattiprolu13:30 - 13:45 **The Radio Neutrino Observatory - Greenland (RNO-G) Experiment****Speaker**

Cosmin Deaconu

13:45 - 14:00 **Memory-triggered supernova neutrino detection****Speaker**

Mainak Mukhopadhyay

14:00 - 14:15 **Hidden-Sector Neutrinos and Freeze-In Leptogenesis****Speaker**

Brian Shuve

14:15 - 14:30

Impact of neutrino effective NSSI on sterile neutrino dark matter production in the early universe**Speaker**

Ms Cristina Benso

14:30 - 14:45 **Neutrino echoes as a probe of secret neutrino interactions****Speaker**

Jose Carpio

14:45 - 15:00 **The dark side of neutrinos**

3:00 PM	<p>Speaker Shreyashi Chakdar</p>
1:30 PM	<p>Parallel: Nuclear - Guller (BH 130) Session Location: Guller (BH 130) Convener: Robert Group</p>
	<p>13:30 - 14:00 Inelastic deexcitation of the Hoyle state</p> <p>Speaker Lee Sobotka</p>
	<p>14:00 - 14:15 New Results from the Majorana Demonstrator</p> <p>Speaker In Wook Kim</p>
	<p>14:15 - 14:30</p> <p>Search for neutrinoless double-beta decays in Ge-76 in the LEGEND experiment</p> <p>Speaker Valentina Biancacci</p>
	<p>14:30 - 14:45 Overview of nEXO neutrinoless double beta decay experiment</p> <p>Speaker Prakash Gautam</p>
	<p>14:45 - 15:00</p> <p>The Neutron Electric Dipole Moment Experiment at Oak Ridge National</p> <p>Speaker Cameron Blake Erickson</p>
3:00 PM	
3:30 PM	<p>Parallel: Axions - Guller (BH 130) Session Location: Guller (BH 130) Convener: Kim Berghaus</p>
	<p>15:30 - 15:45 T-RAX: Transversely Resonant Axion eXperiment</p> <p>Speaker Chang Lee</p>
	<p>15:45 - 16:00 Altered Axion Abundance from a Dynamical Peccei-Quinn Scale</p> <p>Speaker Itamar J. Allali</p>
	<p>16:00 - 16:15 High-quality axions in solutions to the μ problem</p> <p>Speaker Prudhvi Bhattiprolu</p>
	<p>16:15 - 16:30 Searching for Ultra-light Bosons with Stellar Tidal Disruption Events</p> <p>Speaker Peizhi Du</p>
	<p>16:30 - 16:45</p> <p>Gegenschein signal from an inhomogeneous axion dark matter distribution</p> <p>Speaker Takuya Okawa</p>
4:45 PM	

3:30 PM

Parallel: Cosmology II - Ling (BH 160)**Session** | **Location:** Ling (BH 160) | **Convener:** Maurice Van Putten

15:30 - 15:45

Tachyon-Dominated Cosmology: Status Update**Speaker**

Prof. Ian Redmount

15:45 - 16:00

Linking early universe transient CP violation and the electron Electric Dipole Moment**Speaker**

Urjit Yajnik

16:00 - 16:15

Neff constraint on portal interaction with hidden sectors**Speaker**

Pranjal Ralegankar

16:15 - 16:30

Freeze-in baryogenesis via dark-matter oscillations**Speaker**

David Tucker-Smith

16:30 - 16:45

Gravitational Wave Pathway for Testable Leptogenesis**Speaker**

Arnab Dasgupta

4:45 PM

3:30 PM

Parallel: Dark Matter III - McGinnis (BH 210)**Session** | **Location:** McGinnis (BH 210) | **Convener:** Robert McGehee

15:30 - 15:45

Probing Miracle-less WIMP Dark Matter via Gravitational Waves Spectral Shapes**Speaker**

Dr Debasish Borah

15:45 - 16:00

Detecting Dark Matter around Black Holes with Gravitational Waves**Speaker**

Niklas Becker

16:00 - 16:15

Scattering Amplitudes and Unitarity for Gravitationally Mediated Dark Matter in Extra Dimensions**Speaker**

Kirtimaan Mohan

16:15 - 16:30

Vector Boson Dark Matter From Trinification**Speaker**

Anil Thapa

16:30 - 16:45

Stasis in an Expanding Universe: A Recipe for Stable Mixed-Component Cosmological Eras**Speaker**

Brooks Thomas

4:45 PM

3:30 PM

Parallel: Gravity - Zimring (BH 150)

Session | Location: Zimring (BH 150) | Convener: Jim Mertens

15:30 - 15:45

Projective Gauge Theory and Thomas-Whitehead Gravity

Speaker

Vincent Rodgers

15:45 - 16:00

Projective Invariance as the Foundational Principle Beneath Dark Energy and Inflation

Speaker

Kory Stiffler

16:00 - 16:15

Inflation from Dynamical Projective Connections

Speaker

Catherine Whiting

16:15 - 16:30

Projective Geometry, Dark Matter Halos, and Supermassive Black Holes

Speaker

Tyler Grover

16:30 - 16:45

Generative Adversarial Networks for Approximating the Chameleon Scalar Field

Speaker

William Charles

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