



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

## Tuesday, 7 June 2022

### Parallel: BSM - Guller (BH 130) (15:30 - 18:00)

-Conveners: Anil Thapa

time	[id] title	presenter
15:30	[137] Baryon Number Violation in Neutron Stars	ZAKERI, Mohammadreza
15:45	[120] Observable proton decay in Flipped SU(5)	MEHMOOD, Maria
16:00	[104] Probing the $\nu_R$ -philic $Z'$ at DUNE near detectors	CHAUHAN, Garv
16:15	[134] $W$ boson mass, dark matter and $(g-2)_{\ell}$ in the ScotoZee neutrino mass model	DCRUZ, Ritu
16:30	[140] Correlating $W$ -Boson Mass Shift with Muon $(g-2)$ Anomaly in the 2HDM	PADMANABHAN KOVILAKAM, Vishnu
16:45	[110] Upper bound on the smuon mass from vacuum stability in the light of muon $g-2$ anomaly	CHIGUSA, So
17:00	[71] Muon $g-2$ , Neutralino Dark Matter and Stau NLSP	TIWARI, Amit
17:15	[133] Fermion masses and mixings in 3HDM with $S_3$ flavor symmetry	XU, Shiyuan
17:30	[118] Novel Manifestations of Primordial Black Holes	TAKHISTOV, Volodymyr

### Parallel: Collider - Zimring (BH 150) (15:30 - 18:00)

-Conveners: David Tucker-Smith

time	[id] title	presenter
15:30	[142] Toponium at the LHC	ZHENG, Ya-Juan
15:45	[144] $C_p$ Violating Top Yukawa at the Multi TeV Muon Collider	CASSIDY, Morgan
16:00	[127] Machine-Learning quantum entanglement with top quark pair production at the LHC	DONG, Zhongtian
16:15	[123] Heavy Neutral Lepton Searches at the Electron-Ion Collider	XIE, Keping
16:30	[112] Quarkophobic $W'$ for LHC searches	RUIZ, Jose
16:45	[78] Searches for new physics in the final state $B \rightarrow \tau_h p_T^{\text{miss}}$	ATEHORTUA GARCES, Tomas
17:00	[94] Multi-track Displaced Vertices at B-Factories	BLACKBURN, Albany
17:15	[109] Recent results from Belle II	COCHRAN, Jim
17:30	[101] Muon $g-2$ and the B-physics anomalies in RPV Supersymmetry and the discovery prospect at LHC	XU, Fang
17:45	[128] Probing dark sectors with proton bremsstrahlung	FOROUGH-ABARI, Saeid

### Parallel: Cosmology I - Ling (BH 160) (15:30 - 18:00)

-Conveners: Arnab Dasgupta

time	[id] title	presenter
15:30	[150] Beyond Fisher Forecasting for Cosmology	RYAN, Joseph
15:45	[115] Revisiting an Early Dark Energy model and the Hubble Tension in a non-flat Universe	STEVENS, Jordan
16:00	[76] Can Thermal Friction Thaw the Hubble Tension?	BERGHAUS, Kim
16:15	[106] A Hubble parameter estimate $H_0 = (73.37 \pm 0.54)$ km/s/Mpc from the late-time Universe and the BAO	VAN PUTTEN, Maurice
16:30	[107] The impact of relative baryon-CDM perturbations on the evolution of Large-Scale Structures	KHORAMINEZHAD, Hasti
16:45	[14] Finding Evidence for Inflation and the Origin of Galactic Magnetic Fields with CMB Surveys	MANDAL, Sayan
17:00	[124] Cosmological collider signatures of massive gauge bosons	RAHAT, Moinul
17:15	[126] Effects of a Hidden Sector On the Matter Power Spectrum	GANJOO, Himanish
17:30	[77] What does cosmology tell us about the mass of thermal-relic dark matter?	AN, Rui
17:45	[75] A bound on the unparticle-photon cross section from the CMB temperature	AGHAEI ABCHOUYEH, Maryam

**Parallel: Dark Matter I - McGinnis (BH 210) (15:30 - 18:00)**

**-Conveners: Debasish Borah**

time	[id] title	presenter
15:30	[85] Impact of Sommerfeld Effect and Bound State Formation in Simplified t-Channel Dark Matter Models	BECKER, Mathias
15:45	[100] The Light Dark Matter eXperiment, LDMX	GROUP, Robert
16:00	[15] Dark matter studies with the PADME experiment	FRANKENTHAL, Andre
16:15	[84] Maximizing Direct Detection with HYPER Dark Matter	MCGEHEE, Robert
16:30	[98] The SABRE South Experiment at the Stawell Underground Physics Laboratory	ZUROWSKI, Madeleine
16:45	[103] Optimal Pair-finding For Flow Mapping in Liquid Xenon Time Projection Chambers	MCLAUGHLIN, Jacob
17:00	[145] Analytic Approximations for the Velocity Suppression of Dark Matter Capture	PAULIN, Jillian
17:15	[82] Experimental signatures of a new dark matter WIMP	ALLEN, Roland
17:30	[146] Kaluza-Klein Portal Matter	WOJCIK, GEORGE
17:45	[83] Polarized solitons in higher-spin dark matter	JAIN, Mudit

## Wednesday, 8 June 2022

### **Parallel: Dark Matter II - McGinnis (BH 210) (13:30 - 15:00)**

-Conveners: Peizhi Du

time	[id] title	presenter
13:30	[13] Phenomenology of the Dark Matter sector in the Two Higgs Doublet Model with Complex Scalar Singlet extension	DUTTA, Juhi
13:45	[93] Acausality in Superfluid Dark Matter and MOND-like Theories	SHAH, Neil
14:00	[119] Exploring Fundamental Physics with Atmospheric Collider	TAKHISTOV, Volodymyr
14:15	[111] On the construction of theories of $Sp(4)$ dark matter	MEE, Seán
14:30	[68] New production mechanism for keV neutrino dark matter	JARAMILLO, Carlos
14:45	[74] Two-Component Dark Matter (Review)	ALNAFISAH, Ali

### **Parallel: Gravitational Waves - Zimring (BH 150) (13:30 - 15:00)**

-Conveners: Vincent Rodgers

time	[id] title	presenter
13:30	[7] Detecting High-Frequency Gravitational Waves with Microwave Cavities	SCHÜTTE-ENGEL, Jan
13:45	[81] Astrometric Gravitational-Wave Detection via Stellar Interferometry	Dr FEDDERKE, Michael A.
14:00	[97] Traces of a Heavy Field in Gravitational Waves	Dr INOMATA, Keisuke
14:15	[108] Revisiting gravitational wave background from primordial black holes	DENG, Heling
14:30	[122] Gravitational Waves from Early Universe Turbulent Sources at the QCD Scale	CLARKE, Emma
14:45	[113] Forecasting detections of gravitational-wave tails from LIGO data	CARNEY, Matthew

### **Parallel: Neutrino - Ling (BH 160) (13:30 - 15:00)**

-Conveners: Prudhvi Bhattiprolu

time	[id] title	presenter
13:30	[141] The Radio Neutrino Observatory - Greenland (RNO-G) Experiment	DEACONU, Cosmin
13:45	[99] Memory-triggered supernova neutrino detection	MUKHOPADHYAY, Mainak
14:00	[96] Hidden-Sector Neutrinos and Freeze-In Leptogenesis	SHUVE, Brian
14:15	[10] Impact of neutrino effective NSSI on sterile neutrino dark matter production in the early universe	Ms BENSO, Cristina
14:30	[87] Neutrino echoes as a probe of secret neutrino interactions	CARPIO, Jose
14:45	[135] The dark side of neutrinos	CHAKDAR, Shreyashi

### **Parallel: Nuclear - Guller (BH 130) (13:30 - 15:00)**

-Conveners: Robert Group

time	[id] title	presenter
13:30	[117] Inelastic deexcitation of the Hoyle state	SOBOTKA, Lee

14:00	[121] New Results from the Majorana Demonstrator	KIM, In Wook
14:15	[4] Search for neutrinoless double-beta decays in Ge-76 in the LEGEND experiment	BIANCACCI, Valentina
14:30	[139] Overview of nEXO neutrinoless double beta decay experiment	GAUTAM, Prakash
14:45	[143] The Neutron Electric Dipole Moment Experiment at Oak Ridge National	ERICKSON, Cameron Blake

**Parallel: Axions - Guller (BH 130) (15:30 - 16:45)****-Conveners: Kim Berghaus**

time	[id] title	presenter
15:30	[6] T-RAX: Transversely Resonant Axion eXperiment	LEE, Chang
15:45	[73] Altered Axion Abundance from a Dynamical Peccei-Quinn Scale	ALLALI, Itamar J.
16:00	[116] High-quality axions in solutions to the $\mu$ problem	BHATTIPROLU, Prudhvi
16:15	[136] Searching for Ultra-light Bosons with Stellar Tidal Disruption Events	DU, Peizhi
16:30	[151] Gegendeschein signal from an inhomogeneous axion dark matter distribution	OKAWA, Takuya

**Parallel: Cosmology II - Ling (BH 160) (15:30 - 16:45)****-Conveners: Maurice Van Putten**

time	[id] title	presenter
15:30	[70] Tachyon-Dominated Cosmology: Status Update	Prof. REDMOUNT, Ian
15:45	[25] Linking early universe transient CP violation and the electron Electric Dipole Moment	YAJNIK, Urjit
16:00	[1] Neff constraint on portal interaction with hidden sectors	RALEGANKAR, Pranjal
16:15	[102] Freeze-in baryogenesis via dark-matter oscillations	TUCKER-SMITH, David
16:30	[138] Gravitational Wave Pathway for Testable Leptogenesis	DASGUPTA, Arnab

**Parallel: Dark Matter III - McGinnis (BH 210) (15:30 - 16:45)****-Conveners: Robert McGehee**

time	[id] title	presenter
15:30	[24] Probing Miracle-less WIMP Dark Matter via Gravitational Waves Spectral Shapes	Dr BORAH, Debasish
15:45	[12] Detecting Dark Matter around Black Holes with Gravitational Waves	BECKER, Niklas
16:00	[131] Scattering Amplitudes and Unitarity for Gravitationally Mediated Dark Matter in Extra Dimensions	MOHAN, Kirtimaan
16:15	[132] Vector Boson Dark Matter From Trinification	THAPA, Anil
16:30	[147] Stasis in an Expanding Universe: A Recipe for Stable Mixed-Component Cosmological Eras	THOMAS, Brooks

**Parallel: Gravity - Zimring (BH 150) (15:30 - 16:45)****-Conveners: Jim Mertens**

time	[id] title	presenter
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15:30	[5] Projective Gauge Theory and Thomas-Whitehead Gravity	RODGERS, Vincent
15:45	[130] Projective Invariance as the Foundational Principle Beneath Dark Energy and Inflation	STIFFLER, Kory
16:00	[11] Inflation from Dynamical Projective Connections	WHITING, Catherine
16:15	[129] Projective Geometry, Dark Matter Halos, and Supermassive Black Holes	GROVER, Tyler
16:30	[148] Generative Adversarial Networks for Approximating the Chameleon Scalar Field	CHARLES, William