

International Symposium on Cosmology and Particle Astrophysics

Program

Conference Venue: Henry Cheng International Conference Centre (Cheng Yu Tung Building), The Chinese University of Hong Kong, Hong Kong SAR

Date Time	Nov 10 (Fri)	Nov 11 (Sat)	Nov 12 (Sun)	Nov 13 (Mon)
09:00 – 11:00	Welcoming Remarks (9:00) Plenary 1 Room: LT1A Jenni Adams (9:10) Gavin Rowell (9:40) Takaaki Kajita (10:10) Jun Luo (10:40) (09:00 – 11:10)	Plenary 3 Room: LT1A Maura McLaughlin (9:00) Kejia Lee (9:30) Achamveedu Gopakumar (10:00) Reggie Bernardo (10:30)	Plenary 5 Room: LT1A Bin Wang (9:00) Rong-Gen Cai (9:30) Naoki Yoshida (10:00) Yvonne Wong (10:30)	Plenary 7 Room: LT1A Paul Ho (9:00) Yen-chin Ong (9:30) Masahide Yamaguchi (10:00) <i>Coffee break</i> (10:30 – 11:00) 2/F
11:00 – 11:20	<i>Coffee break</i> (11:10 – 11:30) 2/F	<i>Coffee break</i> 2/F	<i>Coffee break</i> 2/F	Parallels 7 (20 mins each)
11:20 – 12:40	Parallels 1 (20 mins each) Room: LT1B Room: LT1A <u>Astrophysics I</u> <u>Gravity I</u> Arsen Levitskiy Yu-Qi Dong Leo W. H. Fung Chao Chen Yuxuan Zeng Yu-Peng Zhang (11:30 – 12:30)	Parallels 3 (20 mins each) Room: LT1A Room: 202 <u>Cosmology I</u> <u>Astrophysics II</u> Fumiya Sano Renbin Yan Osamu Seto Zhe Li M. Zantedeschi Jiashuo Zhang Lu Yin Alex Chow	Parallels 5 (20 mins each) Room: LT1A Room: LT1B <u>Cosmology II</u> <u>Dark Matter III</u> Jeremy Lim Yiming Zhong Yi Zheng Qishan Liu Yuhang Zhu Amruth Alfred Wangzheng Zhang Qianhang Ding	Room: LT1A Room: LT1B <u>Cosmology IV</u> <u>Astrophysics III</u> A. Marciano Jai-chan Hwang Kin-Wang Ng Bhavya Soni G. Tumurtushaa James Nianias Matteo Lulli Shoulong Li (11:00 – 12:20)
12:40 – 13:30	<i>Lunch break</i> Stage, 3/F (Nov 10, 12, 13) & 2/F (Nov 11)			
13:30 – 15:30	Plenary 2 Room: LT1A Remo Ruffini (13:30) Ue-Li Pen (14:00) Shigetaka Moriyama (14:30) Meng-Ru Wu (15:00)	Plenary 4 Room: LT1A Shigeki Matsumoto (13:30) Lam Hui (14:00) Henry Wong (14:30) Kiwoon Choi (15:00)	Plenary 6 Room: LT1A Kaixuan Ni (13:30) Raymond Volkas (14:00) Yeongduk Kim (14:30) <i>Coffee break</i> (15:00 – 15:30) 2/F	Plenary 8 Room: LT1A Joel F. S. Alvear (13:30) Tanmay Vachaspati (14:00) Tsang Keung Chan (14:30) Sang Pyo Kim (15:00)
15:30 – 16:00	<i>Coffee break</i> 2/F	<i>Coffee break</i> 2/F	Parallels 6 (20 mins each)	
16:00 – 17:20	Parallels 2 (20 mins each) Room: LT1B Room: LT1A <u>Dark Matter I</u> <u>Gravity II</u> Liangliang Su Che-Yu Chen Ranjan Laha Jin Wang Thong Nguyen Wen-Di Guo (16:00 – 17:00) Jia-Rui Sun	Parallels 4 (20 mins each) Room: LT1A Room: 202 <u>Dark Matter II</u> <u>Gravity III</u> Yun-Long Zhang Govind Menon Michiru Niibo Chen Zhang Lei Wu Huiyu Zhu Chi Ngam Fong Fu-Wen Shu	Room: LT1A Room: LT1B <u>Cosmology III</u> <u>Dark Matter IV</u> Daniele Gregoris Shuailiang Ge Jie Jiang Priyank Parashari Gonzalez-Espinoza Sung Kei Li Luca Visinelli (15:30 – 16:50)	
17:20 – 18:30			Poster Session Room 203	

November 10 (Friday)

Plenary Session 1 Chair: Sang Pyo Kim Helper: Ivan Room: LT1A, 1/F		
09:00 – 09:10	Sang Pyo Kim , Kunsan National Univ. / APCTP and Alan Chan , Provost, CUHK	Welcoming Remarks
09:10 – 09:40	Jenni Adams , Univ. of Canterbury	IceCUBE
09:40 – 10:10	Gavin Rowell , The Univ. of Adelaide	Searching for the Milky Way's Extreme Particle Accelerators https://cuhk.zoom.us/j/92010329955?pwd=RURYaEordUp5a2N6NEVHVG1RK1NvUT09
10:10 – 10:40	Takaaki Kajita , ICRR, The Univ. of Tokyo	The KAGRA Project - Status and Plans
10:40 – 11:10	Jun Luo , Sun Yat-sen Univ.	TinQin: the Chinese Mission to Detect Gravitational Waves in Space
Parallel Session 1A: Astrophysics I Chair: Hannuksela Helper: Nick Room: LT1B, 1/F		
11:30 – 11:50	Arsen Levitskiy , The Univ. of Hong Kong	Late Growth of Brightest Cluster Galaxies Through ICM Cooling Induced Star Formation
11:50 – 12:10	Leo Wing Hong Fung , The Hong Kong Univ. of Sci. and Tech.	A Model Independent Method for Identifying Dark Matter Substructures: Violation of Geometrical Duality in Strong Gravitational Lensing
12:10 – 12:30	Yuxuan Zeng , The Univ. of Hong Kong	Tracing the Energetic Outflows from Galactic Nuclei: Observational Evidence for a Large-scale Bipolar Radio and X-ray-emitting Bubble-like Structure in M106
Parallel Session 1B: Gravity I Chair: Tjonnie Li Helper: Kin Ho Room: LT1A, 1/F		
11:30 – 11:50	Yu-Qi Dong , Lanzhou Univ.	Polarization Modes of Gravitational Waves in Generalized Proca Theory
11:50 – 12:10	Chao Chen , The Hong Kong Univ. of Sci. and Tech.	Growth of Curvature Perturbations in Non-minimal Curvaton Scenario Revisited
12:10 – 12:30	Yu-Peng Zhang , Lanzhou Univ.	Geodesic Tracking the Gravitational Collapse and Migration of Boson Star
Plenary Session 2 Chair: Bin Wang Helper: Bryce Room: LT1A, 1/F		
13:30 – 14:00	Remo Ruffini , Univ. of Rome "La Sapienza"	GRB-SN Association within the Binary-Driven Hypernova Model https://cuhk.zoom.us/j/92010329955?pwd=RURYaEordUp5a2N6NEVHVG1RK1NvUT09
14:00 – 14:30	Ue-Li Pen , Academia Sinica	Picard-Lefschetz Interpretation of Cosmic Lensing and Beyond
14:30 – 15:00	Shigetaka Moriyama , ICRR, Univ. of Tokyo	Hyper-Kamiokande: Physics Goals and Status of Construction
15:00 – 15:30	Meng-Ru Wu , Inst. of Physics, Academia Sinica	Neutrinos in Astrophysical Explosions
Parallel Session 2A: Dark Matter I Chair: Kaixuan Ni Helper: Bryce Room: LT1B, 1/F		
16:00 – 16:20	Liangliang Su , Nanjing Normal Univ.	Accelerated Light Dark Matter-Earth Inelastic Scattering in Direct Detection
16:20 – 16:40	Ranjan Laha , Indian Inst. of Science	Neutrinos from the Sun can discover dark matter-electron scattering https://cuhk.zoom.us/j/92010329955?pwd=RURYaEordUp5a2N6NEVHVG1RK1NvUT09
16:40 – 17:00	Tran Quang Thong Nguyen , Stockholm Univ.	Dark Photon-Photon Tridents from the Accumulated Dark Matter inside Compact Objects
Parallel Session 2B: Gravity II Chair: Kenny Ng Helper: Kin Ho Room: LT1A, 1/F		
16:00 – 16:20	Che-Yu Chen , iTHEMS, RIKEN	Testing Black Hole Eikonal Correspondence
16:20 – 16:40	Jin Wang , Stony Brook Univ.	Thermodynamics and Kinetics of the Black Hole Phase Transitions
16:40 – 17:00	Wen-Di Guo , Lanzhou Univ.	Quasinormal Modes and Greybody Factor of a Lorentz-violating Black Hole
17:00 – 17:20	Jia-Rui Sun , Sun Yat-sen Univ.	Bulk Reconstruction from the Surface Growth Approach

November 11 (Saturday)

Plenary Session 3: PTA session				Chair: Kin-Wang Ng	Helper: Ken	Room: LT1A, 1/F
09:00 – 09:30	Maura McLaughlin, West Virginia Univ.	Evidence for the Nanohertz Gravitational Wave Background				
09:30 – 10:00	Kejia Lee, Peking Univ.	Progress of Chinese Pulsar Timing Array https://cuhk.zoom.us/j/94534639198?pwd=OU1pWC9mUGxKS0JNUkFDTIVZK2E3QT09				
10:00 – 10:30	Achamveedu Gopakumar, Tata Inst. of Fundamental Research	Promise of Persistent Multi-Messenger nano-Hz GW Astronomy				
10:30 – 11:00	Reggie Bernardo, Inst. of Physics, Academia Sinica	Testing Gravity Using Inter-pulsar Correlation Measurements				
Parallel Session 3A: Cosmology I				Chair: Jane Dai	Helper: Rui	Room: LT1A, 1/F
11:20 – 11:40	Fumiya Sano, Tokyo Inst. of Tech. / IBS	Non-Gaussianities from Heavy Particles with Time-dependent Mass				
11:40 – 12:00	Osamu Seto, Hokkaido Univ.	Weak-scale Leptogenesis in a Radiative Seesaw Model				
12:00 – 12:20	Michael Zantedeschi, Tsung-Dao Lee Inst.	Dynamics of Confinement: Slingshot Mechanism and Gravitation Waves				
12:20 – 12:40	Lu Yin, APCTP	Is Cosmic Birefringence Model-dependent?				
Parallel Session 3B: Astrophysics II				Chair: J. Lim	Helper: Ivan	Room: 202, 2/F
11:20 – 11:40	Renbin Yan, The Chinese Univ. of Hong Kong	Mapping the Interstellar Medium of the Milky Way and Nearby Galaxies				
11:40 – 12:00	Zhe Li, Inst. of High Energy Physics	Evidence of Supernova Remnant W51C Accelerating Cosmic Rays to Sub-PeV Energies Unveiled by LHAASO				
12:00 – 12:20	Jiashuo Zhang, The Univ. of Hong Kong	Caution: Photometric Redshift Catalogs in Lensing Fields Confronts Severe Contamination				
12:20 – 12:40	Alex Chow, The Univ. of Hong Kong	A Lens Finder Map to check claimed High-z Galaxies behind SMACS J0723.3–7327				
Plenary Session 4				Chair: Raymond Volkas	Helper: Rongzi	Room: LT1A, 1/F
13:30 – 14:00	Shigeki Matsumoto, Kavli IPMU, The Univ. of Tokyo	Electroweakly (EW) charged WIMP				
14:00 – 14:30	Lam Hui, Columbia Univ.	Light and Ultra-light Axion Dark Matter				
14:30 – 15:00	Henry Wong, Inst. of Physics, Academia Sinica	Light Dark Matter Searches				
15:00 – 15:30	Kiwoon Choi, CTPU, Inst. for Basic Science	Uncovering the Microscopic Features of Axion with Low Energy Observables				
Parallel Session 4A: Dark Matter II				Chair: Matsumoto	Helper: Rongzi	Room: LT1A, 1/F
16:00 – 16:20	Yun-Long Zhang, NAOC	Pulsar Timing Residuals Induced by Wideband Ultralight Dark Matter https://cuhk.zoom.us/j/94534639198?pwd=OU1pWC9mUGxKS0JNUkFDTIVZK2E3QT09				
16:20 – 16:40	Michiru Niibo, Ochanomizu Univ.	Updated Constraints and Future Prospects on Majoron Dark Matter				
16:40 – 17:00	Lei Wu, Nanjing Normal Univ.	Detection of Ultra-Light Dark Matter with Stimulated Annihilation				
17:00 – 17:20	Chi Ngam Fong, The Chinese Univ. of Hong Kong	Constraining Particle Dark Matter with eROSITA Early Data				
Parallel Session 4B: Gravity III				Chair: Yen-chin Ong	Helper: Peter	Room: 202, 2/F
16:00 – 16:20	Govind Menon, Troy Univ.	Force-Free Electrodynamics and Black Hole Magnetospheres				
16:20 – 16:40	Chen Zhang, The Hong Kong Univ. of Sci. and Tech.	Detecting High-Frequency Gravitational Waves in Planetary Magnetosphere				
16:40 – 17:00	Huiyu Zhu, The Hong Kong Univ. of Sci. and Tech.	Termination of Superradiance from a Binary Companion				
17:00 – 17:20	Fu-Wen Shu, Nanchang U.	Quantum Gravity Induced Entanglement of Masses in Curved Spacetimes				

November 12 (Sunday)

Plenary Session 5 Chair: Kiwoon Choi Helper: Zhuochao Room: LT1A, 1/F		
09:00 – 09:30	Bin Wang , Shanghai Jiao Tong Univ. / Yangzhou Univ.	21cm Intensity Mapping: A New Window to Probe DE
09:30 – 10:00	Rong-Gen Cai , ITP, CAS / Ningbo Univ.	Primordial Black Holes and Stochastic Gravitational Waves
10:00 – 10:30	Naoki Yoshida , Kavli IPMU, The Univ. of Tokyo	Simulating Cosmic Structure Formation
10:30 – 11:00	Yvonne Wong , Univ. of New South Wales	CMB Constraints on New Physics
Parallel Session 5A: Cosmology II Chair: Yvonne Wong Helper: Zhuochao Room: LT1A, 1/F		
11:20 – 11:40	Jeremy Lim , The Univ. of Hong Kong	How did Galaxy Clusters Reach Their Observed Physical States?
11:40 – 12:00	Yi Zheng , Sun Yat-sen Univ.	Cosmological Gravitational Test by RSD and kSZ Effect
12:00 – 12:20	Yuhang Zhu , Inst. for Basic Science	Cosmological Correlators Through the Looking Glass
12:20 – 12:40	Wangzheng Zhang , The Chinese Univ. of Hong Kong	Cosmological Measurement of Neutrino Properties
Parallel Session 5B: Dark Matter III Chair: Henry Wong Helper: Rui Room: LT1B, 1/F		
11:20 – 11:40	Yiming Zhong , City Univ. of Hong Kong	The Impact of Baryonic Potentials on the Evolution of Self-interacting Dark Matter Halos
11:40 – 12:00	Qishan Liu , The Chinese Univ. of Hong Kong	The Sensitivity Floor for Primordial Black Holes Neutrino Searches
12:00 – 12:20	Amruth Alfred , The Univ. of Hong Kong	Lighting up Dark Matter with Gravitational Lensing
12:20 – 12:40	Qianhang Ding , Inst. for Basic Science	A Dark Matter Probe in Accreting Pulsar-Black Hole Binaries
Plenary Session 6 Chair: Rong-Gen Cai Helper: Boris Room: LT1A, 1/F		
13:30 – 14:00	Kaixuan Ni , Univ. of California, San Diego	The Road Towards the Ultimate WIMP Dark Matter Direct Detection
14:00 – 14:30	Raymond Volkas , The Univ. of Melbourne	Flavours of Dark Matter
14:30 – 15:00	Yeongduk Kim , CUP, Inst. for Basic Science	Status of AMoRE Project
Parallel Session 6A: Cosmology III Chair: Yoshida Helper: Boris Room: LT1A, 1/F		
15:30 – 15:50	Daniele Gregoris , Jiangsu Univ. of Sci. & Tech.	On the Uniqueness of Λ CDM-like Evolution for Homogeneous and Isotropic Cosmology in General Relativity
15:50 – 16:10	Jie Jiang , Pusan National Univ.	Numerical Investigation of Two-Dimensional Fokker-Planck Equation in Inflationary Models: Importance of Slow-Roll Parameters
16:10 – 16:30	Manuel González-Espinoza , Playa Ancha Univ.	Odd-parity Perturbations in the Most General Scalar-vector-tensor Theory
Parallel Session 6B: Dark Matter IV Chair: Yiming Zhong Helper: Che Room: LT1B, 1/F		
15:30 – 15:50	Shuailiang Ge , Peking Univ.	Primordial Black Holes, Dark Matter, and Gravitational Waves from QCD axion and axion-like particles
15:50 – 16:10	Priyank Parashari , Indian Inst. of Sci.	Lyman- α Constraints on the Primordial Black Hole Dark Matter
16:10 – 16:30	Sung Kei Li , The Univ. of Hong Kong	Constraining Abundance of Primordial Blackholes in Dark Matter via Transients Comprising Lensed Star Clusters
16:30 – 16:50	Luca Visinelli , Shanghai Jiao Tong Univ.	The Interplay of Primordial Black Holes, Dark Matter, and Axions

November 12 (Sunday)

16:50 – 18:30

Poster Session		Room: 203, 2/F
1	Ling Cheung, The Chinese Univ. of Hong Kong	Torsional Oscillations of Magnetized Neutron Stars: Impacts of Laudau-Rabi Quantization of Electron Motion
2	Yiwei He, The Univ. of Hong Kong	Using Nature's Cosmic Telescopes to Peer Deeper into the Hubble tension
3	Shang-Jie Jin, Northeastern Univ.,	Forecast for Cosmological Parameter Estimation in the Era of the Third-generation Gravitational Wave Detectors
4	Man Hei Leung, The Chinese Univ. of Hong Kong	Improving HAWC Dark Matter Constrain with Inverse Compton Scattering
5	Shashpal Singh, The Univ. of Hong Kong	Through the Lens of Mystery: Unmasking Dark Matter with Gravitational Lensing
6	Ji-Yu Song, Northeastern Univ.	Synergy between CSST Galaxy Survey and Gravitational-wave Observation: Inferring the Hubble Constant from Dark Standard Sirens
7	Sut-Ieng Tam, Academia Sinica	Likelihood-Free Forward Modelling for Cluster Weak Lensing and Cosmology
8	Yat To Tang, The Chinese Univ. of Hong Kong	Oscillations and Tidal Deformations of Crystallized White Dwarfs
9	Wangzheng Zhang, The Chinese Univ. of Hong Kong	Cosmological Measurement of Neutrino Properties
10	Hon Ka Hui, The Chinese Univ. of Hong Kong	Horizon Finding in Numerical Relativity
11	Chun Ming Yip, The Chinese Univ. of Hong Kong	On the Nucleosynthesis in Accretion-Induced Collapse of White Dwarfs

November 13 (Monday)

Plenary Session 7 Chair: Sang Pyo Kim Helper: Peter Room: LT1A, 1/F		
09:00 – 09:30	Paul Ho , Academia Sinica	Direct Imaging of Supermassive Black Holes
09:30 – 10:00	Yen-chin Ong , Yangzhou Univ.	Black Holes, Maximum Force, and Related Conjectures in General Relativity
10:00 – 10:30	Masahide Yamaguchi , CTPU, Inst. for Basic Science	Quantum Tunneling in Curved Spacetime
Parallel Session 7A: Cosmology IV Chair: T K Chan Helper: Che Room: LT1A, 1/F		
11:00 – 11:20	Antonino Marciano , Fudan Univ.	Have Pulsar Timing Array Methods Detected a Cosmological Phase Transition?
11:20 – 11:40	Kin-Wang Ng , Academia Sinica	Primordial Perturbations from Ultra-slow-roll Single-field Inflation with Quantum Loop Effects
11:40 – 12:00	Gansukh Tumurtushaa , Jeju National Univ.	Higgs Inflation with a Gauss-Bonnet Term in the Einstein Frame
12:00 – 12:20	Matteo Lulli , Southern Univ. of Sci and Tech	Cosmological and Astrophysical Implications of the Stochastic Ricci Flow
Parallel Session 7B: Astrophysics III Chair: Paul Ho Helper: Wangzheng Room: LT1B, 1/F		
11:00 – 11:20	Jai-chan Hwang , Inst. for Basic Science	On Graviton-photon Conversions in Magnetic Environments
11:20 – 11:40	Bhavya Soni , IIT Jodhpur	Distinguishing Dirac and Majorana Neutrinos Using Temporal Correlation
11:40 – 12:00	James Nianias , The Univ. of Hong Kong	Properties of the Brightest Multiply-Lensed Lyman- α Sources in Cluster Fields
12:00 – 12:20	Shoulong Li , Hunan Normal Univ.	Can a Star be Smaller Than a Black Hole?
Plenary Session 8 Chair: Bin Wang Helper: Wangzheng Room: LT1A, 1/F		
13:30 – 14:00	Joel Francisco Saavedra Alvear , Pontifical Catholic Univ. of Valparaíso	Thermodynamics of Apparent Gauss Bonnet Cosmology and Multivalued Hamiltonian Issues
14:00 – 14:30	Tanmay Vachaspati , Arizona State Univ. / CERN	Cosmological Magnetic Fields https://cuhk.zoom.us/j/91482822795?pwd=S2dLQ1RRQ2tSTE53MXRROFM2WmdXZz09
14:30 – 15:00	Tsang Keung Chan , The Chinese Univ. of Hong Kong	Cosmological Galaxy Simulations
15:00 – 15:30	Sang Pyo Kim , Kunsan National Univ. / APCTP	Schwinger Effect in Magnetized Black Holes and KN Black Holes