

**IAS Program on High Energy Physics 2022**

**Mini-workshop on Theory: Searching for New Physics at Various Energy Scales**

(HKT | GMT +8) January 13-14, 2022 at 09:00 - 12:10 & 15:00 - 18:10

Format of Talk: 25-minute presentation + 5-minute Q&A

	January 13, 2022 (Thursday)			January 14, 2022 (Friday)				
	Theme: Ultra-heavy DM			Theme: Sub-GeV/ GeV/ TeV DM				
Morning	Chair: Yue ZHAO (The University of Utah)			Chair: Ke FANG (University of Wisconsin-Madison)				
	Title	Speaker		Title	Speaker			
	08:55 - 09:00	Opening Remarks	Tao LIU (The Hong Kong University of Science and Technology)					
	09:00 - 09:30	Dark Matter from Primordial Black Holes	Pearl SANDICK (The University of Utah)	09:00 - 09:30	Direct Detection of Sub-GeV Dark Matter	Tongyan LIN (University of California, San Diego)		
	09:30 - 10:00	Did LIGO Detect Dark Matter? An Update.	Simeon BIRD (University of California, Riverside)	09:30 - 10:00	Indirect Detection limits on Minimal Electroweak Dark Matter	Matthew BAUMGART (Arizona State University)		
	10:00 - 10:30	Primordial Black Holes as Dark Matter in the View of LIGO/Virgo Observations	Sébastien CLESSE (Free University of Brussels (ULB))	10:00 - 10:30	Neutrino Astronomy at High Energies	Qinrui LIU (Queen's University)		
	10:30 - 10:40	Break			10:30 - 10:40	Break		
	Theme: Ultra-light DM			Theme: Sub-GeV/ GeV/ TeV DM				
	Chair: Tao LIU (The Hong Kong University of Science and Technology)			Chair: Ke FANG (University of Wisconsin-Madison)				
	Title	Speaker		Title	Speaker			
	10:40 - 11:10	The Cosmic Axion Background	Jeff DROR (University of California, Santa Cruz)	10:40 - 11:10	Ultra-diffuse Galaxies and Their Complications for Testing Dark Matter Theories	Hai-bo YU (University of California, Riverside)		
	11:10 - 11:40	Determining the Existence of Primordial Black Holes and Ultralight Dark Matter Using Gravitational-wave Detectors	Andrew MILLER (Université catholique de Louvain)	11:10 - 11:40	Searching for Ultra-light Bosons in Stellar Tidal Disruption Events	Daniel EGANA-UGRINOVIC (Perimeter Institute for Theoretical Physics)		
	11:40 - 12:10	Axi-Higgs Cosmology	Henry TYE (The Hong Kong University of Science and Technology)	11:40 - 12:10	Detecting High-Frequency Gravitational Waves with Microwave Cavities	Jan SCHÜTTE-ENGEL (University of Illinois)		
After-noon	Theme: Ultra-light DM			Theme: Sub-GeV/ GeV/ TeV DM				
	Chair: Yue ZHAO (The University of Utah)			Chair: Ke FANG (University of Wisconsin-Madison)				
	Title	Speaker		Title	Speaker			
	15:00 - 15:30	Gravitational Wave Detection between NANOGrav and LISA	Surjeet RAJENDRAN (The Johns Hopkins University)	15:00 - 15:30	TeV Halos: A New Class of TeV Sources Powered by Pulsars	Timothy LINDEN (Stockholm University)		
	15:30 - 16:00	Pulsar Polarization Arrays	Jing REN (Institute of High Energy Physics, Chinese Academy of Sciences)	15:30 - 16:00	Recent Developments in the Very-high-energy Gamma-ray Astronomy	Hao ZHOU (Shanghai Jiao Tong University)		
	16:00 - 16:30	Solar Reflection of Dark Matter	Haipeng AN (Tsinghua University)	16:00 - 16:30	Multi-messenger Searches for New Physics	Daniele GAGGERO (Istituto de Física Corpuscular (IFIC) UV-CSIC)		
	16:30 - 16:40	Break			16:30 - 16:40	Break		
	Theme: Ultra-light DM			Theme: Sub-GeV/ GeV/ TeV DM				
	Chair: Yue ZHAO (The University of Utah)			Chair: Tao LIU (The Hong Kong University of Science and Technology)				
	Title	Speaker		Title	Speaker			
	16:40 - 17:10	Dark Photon Dark Matter Searches at LIGO	Huaike GUO (The University of Utah)	16:40 - 17:10	Super Heavy Dark Matter	Eric KUFLIK The Hebrew University of Jerusalem)		
	17:10 - 17:40	Search for Ultralight Dark Matter and Cosmological Phase Transition with Parkes Pulsar Timing Array	Qiang YUAN (Purple Mountain Observatory, Chinese Academy of Sciences)	17:10 - 17:40	Searching for Dark Matter with High-energy Neutrinos	Kenny C. Y. NG (The Chinese University of Hong Kong)		
	17:40 - 18:10	Heavy Sterile Neutrinos: From Cosmology to Experiment	Marco DREWES (Université catholique de Louvain)	17:40 - 18:10	Cosmic Ray Boosted Dark Matter for Overcoming the Direct Detection Threshold	Shao-Feng GE (Tsung-Dao Lee Institute, Shanghai Jiao Tong University)		