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# Physics

News Letter

October | 2021

## New Members of the Department



### ■ Prof. Giulio Chiribella

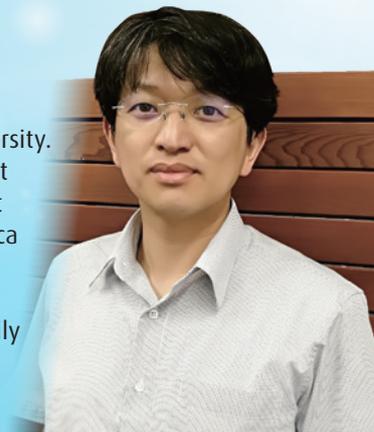
Professor (by courtesy) (Professor, Department of Computer Science)

Prof. Chiribella is a quantum theorist working in quantum information science and in the foundations of quantum mechanics. Previously, he served as a Professor at the University of Oxford and as Associate Professor at Tsinghua University. He was awarded the Hermann Weyl Prize (2010), an RGC Senior Research Fellowship (2020), a Croucher Senior Research Fellowship (2018), a CIFAR-Azrieli Global Scholar Fellowship (2016), and a Young 1000 Talents of China Fellowship (2012). He is currently a Visiting Professor at the University of Oxford, a Visiting Fellow of Perimeter Institute for Theoretical Physics, and a member of the Standing Committee of the International Colloquium on Group Theoretical Methods in Physics.

### ■ Prof. Lain-Jong (Lance) Li

Chair Professor (by courtesy) (Chair Professor, Department of Mechanical Engineering)

Professor Lain-Jong (Lance) Li received his BSc and MSc in chemistry at National Taiwan University. He obtained his PhD of condensed matter physics at Oxford University in 2006 with the support of Swire Scholarship. He then joined Nanyang Technological University Singapore as an Assistant Professor from 2006 to 2009. Since 2010, he has become an Associate Professor at Academia Sinica Taiwan. He joined King Abdullah University of Science and Technology in 2014 and became a Full Professor in 2016. He then took the Director position in Corporate Research at the most advanced foundry company, Taiwan Semiconductor Manufacturing Company (TSMC), from 2017-2020. He formally joined the Department of Mechanical Engineering as a chair professor in nanomaterials for future electronics in March of 2021. His research is primarily focusing on solving these grand challenges for extending the Moore's Law and realizing high-performance future electronics.



### ■ Dr. Wenyuan Wang

Research Assistant Professor, B.Sc. HKU; Ph.D. Toronto

Dr. Wang received his BSc in Physics & Computer Science from the University of Hong Kong in 2015, and Ph.D. in Physics from the University of Toronto in 2020. He worked at the University of Waterloo as a postdoc for one year, and is happy to re-join HKU in 2021 as a Research Assistant Professor collaborating with Prof. Hoi-Kwong Lo. Dr. Wang's main research interest is quantum communication, especially the design/optimization of quantum key distribution (QKD) protocols and the combination of computational techniques (e.g. machine learning and semidefinite programming) with QKD. Dr. Wang is the recipient of the QCRYPT2018 Best Student Paper Award and the 2019 Chinese Government Award for Outstanding Self-financed Students Abroad.



### Editors:

Dr. Kai-Ming Lee  
Prof. Hoi-Kwong Lo



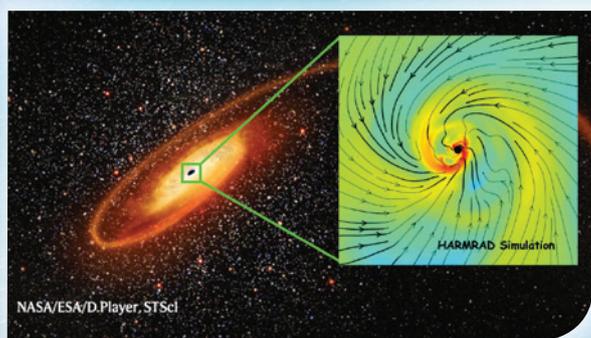
<https://www.physics.hku.hk/>

## Also joining us are a few supporting staff members:

- Ms. Rachel Liu of general office has re-joined the department in July 2020 as Clerk I.
- Mr. Kei Yeung Wong recently joined the department as Technical Officer.
- Ms. Zenobia Ho of general office recently joined the department as Intern.

## Farewell to...

- Dr. Meng Su has left the department, but he will carry the title Honorary Associate Professor in the near future. He joined the department in 2016.
- Mr. Wing Cheun Liu, our technician, has left the department. He joined the department in 2009.



- Peng-Ling Dai, et. al., "Spinon Fermi Surface Spin Liquid in a Triangular Lattice Antiferromagnet  $\text{NaYbSe}_2$ " <https://journals.aps.org/prx/abstract/10.1103/PhysRevX.11.021044>
- Chao-Kai Li, et. al., "Twisted magnetic topological insulators" <https://journals.aps.org/prresearch/abstract/10.1103/PhysRevResearch.3.033156>
- X. Rao, et. al., "Survival of itinerant excitations and quantum spin state transitions in  $\text{YbMgGaO}_4$  with chemical disorder" <https://www.nature.com/articles/s41467-021-25247-6>

## Other News

- Our Physics Colloquium series has been resumed since Spring 2021 and is currently hosted in a virtual format. For this semester we have 8 experts from top universities in Europe, US and Asia, who will talk about their exciting research programs in the areas of astronomy and astrophysics, atomic and nuclear physics, condensed matter physics, optics and photonics, and quantum information. The schedule and detailed information of the talks can be found here: <https://www.physics.hku.hk/event/coming/col-2021-fall> Please join us every other Wednesday!
- Mr Thomas H T WONG has won the Excellent Teaching Assistant Award 2020-21. [https://www.scifac.hku.hk/award-achievement/facu\\_excellent-teaching-assistant-award](https://www.scifac.hku.hk/award-achievement/facu_excellent-teaching-assistant-award)
- Mr Chengkang Zhou, then a HKU first-year physics PhD student obtained the Higgs mode via dimensional crossover in quantum magnets which reveals importance of dimensions in many-body systems. <https://www.hku.hk/press/press-releases/detail/22907.html>
- There are two new Master of Science Programmes offered by the department. MSc Space Science is already running: <https://www.physics.hku.hk/prospective-students/tpg-admissions/MScSpaceScience> MSc Physics will start to admit students in September 2022. We will say more in the next issue.

## Awards and Research Highlights

- Prof. Wang Yao has been awarded the 2021 Xplorer Prize. <https://admissions.hku.hk/explore/news/two-hku-academics-win-2021-xplorer-prize>  
A description of the Xplorer Prize can be found in the website <http://www.ashk.org.hk/en/news/details/1678> where it stated the following: "Established by Tencent Foundation in 2018, the XPLOER PRIZE aims to support Chinese young scientists and technicians working in areas of fundamental science and research. Each winner will get a sum of RMB 3 million over the course of five years."
- Both Dr. Jenny Lee and Dr. Jane Lixin Dai are awarded the National Excellent Young Scientists Fund (Hong Kong and Macau) for 2021: <https://www.scifac.hku.hk/award-achievement/awarded-national-excellent-young-scientists-funds-2021>
  - Dr Lee is a nuclear physics experimentalist aiming to investigate the novel structure of extremely exotic nuclei with radioactive isotope beams and construct new-generation detection array for high-precision measurements. The awarded project employs their state-of-the-art arrays to explore A) isospin symmetry breaking via precise beta-decay spectroscopy of  $^{23}\text{Si}$  at HIRFL of Institute of Modern Physics (China), B) new magicity in  $^{100}\text{Sn}$  via in-beam gamma spectroscopy of  $^{100}\text{Sn}$  at RIKEN (Japan), guiding towards comprehensive and even beyond traditional understanding of nuclear forces.
  - Dr. Jane Lixin Dai has received this award for making a significant contribution to the understanding of tidal disruption events, in which stars are torn apart and devoured by supermassive black holes. These extremely luminous, transient events can be used to probe the majority population of supermassive black holes which are usually undetectable. With this fund, Dr. Dai and her group at HKU will continue to develop their state-of-the-art simulations using which the discoveries have been made. They will also tackle topics such as other types of black hole accretion phenomena and the co-evolution of massive black holes and galaxies.

Physics  
Colloquium