International Workshop on Quantum Characterization, Verification, and Validation (IWQCVV)

量子刻画与验证国际研讨会

23 Aug – 25 Aug 2023

Department of Physics, Fudan University, Shanghai, China

Quantum technologies promise to dramatically boost our capability in secure communication, fast computation, precise metrology, and efficient simulation of quantum many-body systems. To harness the power of quantum technologies, it is crucial to characterize and verify quantum systems and quantum devices with a high precision. The problem is becoming more and more pressing in recent years as the system size increases, and traditional tomographic methods are too prohibitive to apply. Accordingly, Quantum Characterization, Verification, and Validation (QCVV) has become an active research field that aims to address this problem. New results and new challenges are popping out from time to time. So it is now a good time to gather experts and students together to discuss the latest development in this area. The workshop we plan to organize on 23-25 Aug in Shanghai may hopefully serve as a good platform to achieve this goal. The main interests of this workshop include (but not limited to)

- ❑ Efficient characterization and verification of multipartite quantum states
- ❑ Efficient characterization and verification of NISQ devices
- ❑ Efficient detection of quantum entanglement and other quantum features
- ❑ Efficient verification of quantum computation, simulation, and quantum networks
- ❑ Toolbox based on randomized measurements
- ❑ Quantum metrology
- ❑ Other related topics

Invited Speakers:

Animesh Datta (University of Warwick, UK)

Barry Sanders (Calgary University, Canada)

Da-Wei Wang (Zhejiang University)

Dengke Qu (Southeast University)

Dong Liu (Tsinghua University)

Geng Chen (University of Science and Technology of China)

Guo-Yong Xiang (University of Science and Technology of China)

Haidong Yuan (The Chinese University of Hong Kong)

He Lu (Shandong University)

Hsin-Yuan Huang (Caltech)

Hui Khoon Ng (National University of Singapore)

Jens Eisert (Free University of Berlin)

Lijian Zhang (Nanjing University)

Nana Liu (Shanghai Jiao Tong University)

Qi Zhao (The University of Hong Kong)

Shunlong Luo (Academy of Mathematics and System Sciences, CAS)

Shuo Yang (Tsinghua University)

Soonwon Choi (MIT)

Tomoyuki Morimae (Kyoto University)

Valerio Scarani (National University of Singapore)

Xiao-Dong Yu (Shandong University)

Xiaosong Ma (Nanjing University)

Xin Wang (Hong Kong University of Science and Technology, Guangzhou)

Xiongfeng Ma (Tsinghua University)

Yanhong Xiao (Shanxi University)

Yoshifumi Nakata (Kyoto University)

Yuxiang Yang (The University of Hong Kong)

Zhaohui Wei (Tsinghua University)

Zhengfeng Ji (Tsinghua University)

Zhibo Hou (University of Science and Technology of China)

Organizers:

Huangjun Zhu (Fudan University)

Jiangwei Shang (Beijing Institute of Technology)

You Zhou (Fudan University)

Secretary:

Ms Xinli Yan, yanxinli@fudan.edu.cn

For more information, please visit: http://iwqcvv2023.top/