

Quantum Gases 2024

Aug 28-30 2024

清华大学西阶梯教室 (科学馆北侧)

Organizers:

Hui Zhai, Jiazhong Hu, Wenlan Chen, Tin-Lun (Jason) Ho
Institute for Advanced Study and Department of Physics, Tsinghua Univ.

Invited Speakers:

Loic Anderegg (Harvard)
Hannes Bernien (Chicago)
Jean-Philippe Brantut (EPFL)
Lawrence Cheuk (Princeton)
Kai Dieckmann (NUS)
Flavien Gyger (MPQ)
Meng-Zi Huang (ETH Zurich)
Yunpeng Ji (Stanford)
Xinyu Luo (MPQ)
William Milner (Univ. of Colorado)
Nir Navon (Yale)
Gabriel Patenotte (Harvard)
Pai Peng (Princeton/Peking Univ.)
Adam L. Shaw (Caltech)
David Spierings (MIT)
Dajun Wang (CUHK)
Hai-Bin Wu (ECNU)
Xing-Can Yao (USTC)
Zhen-Sheng Yuan(USTC)
Bo Zhao (USTC)
Jing Zhang (Shanxi Univ.)

会议日程见会议网站:
<http://ultracold.cn/conference/>
或关注“阵列前行”公众号



Aug 28-Schedule

9:30-9:45 Registration

9:45-10:00 Opening by Hui Zhai

Morning Session

Chair: Li You, THU

10:00-10:40 Hannes Bernien, Chicago

A dual-species atom array

10:40-11:20 Lawrence Cheuk, Princeton

Optical tweezer arrays of molecules as a new quantum science platform

11:20-11:40 Break

11:40-12:20 Adam L. Shaw, Caltech

High-fidelity and high-entanglement quantum science with tweezer arrays

12:20-2:00 Lunch Break

Afternoon Session 1

Chair: Yingfei Gu, THU

2:00-2:40 Gabriel Patenotte, Harvard

Fast entanglement and an iSWAP gate between molecular qubits

2:40-3:20 Pai Peng, Princeton/PKU

High-fidelity gates with mid-circuit erasure conversion in a metastable neutral atom qubit

3:20-3:40 Break

Afternoon Session 2

Chair: Xiongjun Liu, PKU

3:40-4:20 Flavien Gyger, MPQ

Iterative assembly of large-scale atom arrays

4:20-5:00 Zhen-Sheng Yuan, USTC

Observation of counterflow superfluidity in a two-component Mott insulator

Aug 29-Schedule

Morning Session 1

Chair: Xiaoling Cui, IOP

9:30-10:10 Nir Navon, Yale

Many-body physics with fermions in an optical box

10:10-10:50 Mengzi Huang, ETH Zurich

Irreversible entropy transport between strongly interacting superfluids

10:50-11:10 Break

Morning Session 2

Chair: Peng Zhang, Renmin U

11:10-11:50 William Milner, U of Colorado

Coherent evolution of super-exchange interaction in seconds-long optical clock spectroscopy

11:50-12:30 Jing Zhang, Shanxi U

Atomic Bose-Einstein condensate in a twisted-bilayer optical lattice

12:30-2:00 Lunch Break

Afternoon Session

Chair: Shiqian Ding, THU

2:00-2:40 Loic Anderegg, Harvard

Laser-cooled molecules for quantum science and fundamental physics

2:40-3:20 Xinyu Luo, MPQ

Microwave-shielded ultracold fermionic polar molecules

3:20-3:40 Break

3:40-4:20 Jiazhong Hu, THU

Probing many-body correlations via non-equilibrium dynamics

Aug 30-Schedule

Morning Session 1

Chair: Wenlan Chen, THU

9:30-10:10 Jean-Philippe Brantut, EPEL

Dynamics of long-range interacting Fermi gases

10:10-10:50 Hai-Bin Wu, ECNU

Quenching dynamics of ultracold interacting Fermi gases

10:50-11:10 Break

Morning Session 2

Chair: Hao Zhang, GSCAEP

11:10-11:50 David Spierings, MIT

Harnessing light-matter interactions enhanced by an optical cavity for quantum information applications

11:50-12:30 Yunpeng Ji, Stanford

Quantum spin glass in a multimode cavity QED system

12:30-2:00 Lunch Break

Afternoon Session 1

Chair: Tao Shi, ITP

2:00-2:40 Dajun Wang, CUHK

Loss suppression and evaporative cooling of ultracold NaRb molecules

2:40-3:20 Bo Zhao, USTC

Creation of ultracold triatomic molecules

3:20-3:40 Break

Afternoon Session 2

Chair: Hui Zhai, THU

3:40-4:20 Kai Dieckmann, NUS

Efficient creation of ground state polar molecules of LiK

4:20-5:00 Xingcan Yao, USTC

A homogeneous fermionic Hubbard quantum simulator

5:00-5:30 Discussion

5:30-5:45 Concluding Remark by Tin-Lun Ho