

Quantum Information Science in High Energy Nuclear Physics

Jun 15–19, 2026, Wuhan, China

Central China Center for Nuclear Theory (C3NT)

Institute of Particle Physics (IOPP)

Central China Normal University (CCNU)

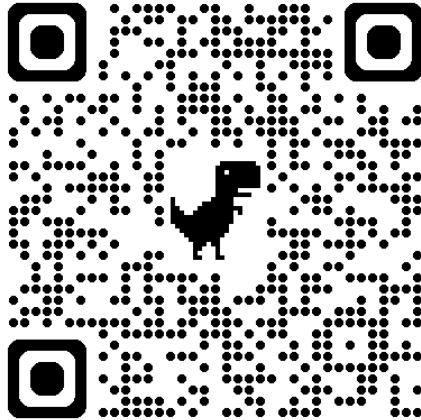


Schedule

- Talks 35mins (including Q&A)
- Registration desk to find your name tag, mug, schedule

Remote participation

- Zoom: <https://lbnl.zoom.us/j/3438554283>
- No password



Wifi & space

- Room 427
 - Password 427724#
 - Wifi: iopp1, password: 12345678
 - Wifi: iopp2, password: 12345678

Dining

- Lunch: we provide lunch boxes for all participants.
- Group dinner: Monday (reception), Tuesday (Banquet)
- Exploration on Wednesday and Thursday (no dinner provided)

CCNU Food Guide

华中师范大学周边美食地图



Wuhan Flavors / 武汉特色:
Cai Cai, Hetian Tian



BBQ / 烤肉:
Pangji, Jiucang



Hotpot / 火锅:
Haidilao, Longge, Jinguanxiang



Other Picks / 其他:
Lao Chengdu Cold Pot Fish,
Xiaomin Dapaidang, Jiangxi Cuisine,
Pangge Liang, Coconut Chicken,
Tang Shifu Northeastern Food

Street Entrance / 街道口:
Chagang, Yibo Paper-Wrapped
Fish, Banu Hotpot



Southwest side:
Chuan Pangzi, BBQ



Near South Lake Campus / 南湖校区附近:

Xinjiang lamb skewers,
Zheng Liangping BBQ



Guangba Rd / 广八路:

Snack Street. Try Penghuwan
stir-fry, stone pancake, lamb
skewers, soda buns, late-night BBQ.



Within 15 min by car / 车程15分钟内:
Tianbao Restaurant, Liangliang
Steamed Shrimp, Xianning Chibi Hotpot.



**Central China Normal
University (CCNU)**
华中师范大学

**Building No. 9
九号楼**

**Guiyuan
桂园**

**East Gate
东门**

Huquan St / 虎泉街

East Gate area / 东门外:
Close to Guiyuan. More
late-night food near Yangjiawan.
Try Xiahuang crayfish.



Method of payment

- Cash and credit card are not very common.
- Two major method of payments:

WeChat pay & Alipay



The Scientific Program

MON

09:00 - 09:10 Xin-Nian Wang - Opening

09:10 - 09:45 Germán Rodrigo

Quantum Algorithms for Event Generators at High-Energy Colliders

09:45 - 10:20 Xu-Guang Huang

QCD matter under acceleration

10:50 - 11:25 Hideki Okawa

Experimental applications of quantum algorithms in high-energy physics

11:25 - 12:00 James P. Vary

Defining quantum advantage in microscopic nuclear theory

14:00 - 14:35 Enrique Rico Ortega

Probing Confinement with Superconducting Circuits: From Z2 String Dynamics to Continuous U(1) Electrodynamics

14:35 - 15:10 Xiaoyang Wang

Real-time correlation functions on quantum computers and neural networks

15:10 - 15:45 Matteo Wauters

Discrete non-Abelian lattice gauge theories: a playground for high-energy, many-body and quantum information science

16:15 - 16:50 Simone Montangero

Tensor network algorithms for high-dimensional HEP quantum simulations

16:50 - 17:25 Yang Li

Quantum entanglement of partons within strongly coupled QFTs

TUE

09:00 - 09:35 Zhen-Sheng Yuan

Quantum simulation of lattice gauge theory

09:35 - 10:10 Francesco Pederiva

Quantum simulation of simple nuclear reactions with realistic state dependent potentials

10:30 - 12:00 Carlos A. Salgado - IOPP Colloquium

Forming a Quark Gluon Plasma in a Few Yoctoseconds

14:00 - 14:35 Jad Halimeh

Observation of glueballs and string breaking in 2+1D lattice gauge theories on a quantum computer

14:35 - 15:10 Shuzhe Shi

Approach to thermalization using quantum dynamics

15:40 - 16:15 Simran Singh

Lattice QED3 with staggered and Wilson fermions: finite density and topology

16:15 - 16:50 Di Luo

Neural network wavefunctions for Hamiltonian lattice gauge theory simulations

- Organizers: Wenyang Qian, Enrique Rico Ortega, Alessandro Roggero, Carlos Salgado, Manuel Schneider, James P. Vary, Hongxi Xing
- Contact: c3nt@ccnu.edu.cn (Xiangyu Shui), wqian@ccnu.edu.cn (Wenyang Qian)
- C3NT Website: c3nt.ccnu.edu.cn

WED

09:00 - 09:35 Alessandro Roggero

Nuclear dynamics on digital quantum computers

09:35 - 10:10 Xingyu Guo

Quantum simulations of various topics in 1+1D gauge theory

10:40 - 11:15 Alessio Celi

Renormalized dual basis and continuum limit

11:15 - 11:50 Srimoyee Sen

Floquet systems and lattice fermions

14:00 - 14:35 Meijian Li

Light-Front Hamiltonian Approach to QCD Jets in Quantum Era

14:35 - 15:10 Andrea Bulgarelli

Toward quantum simulations of Maxwell-Chern-Simons theory: constant modes and gauge field truncation

15:10 - 15:45 Dong Bai

Spin-State Teleportation at MeV Energies via Entanglement Generation and Manipulation Between Protons

16:15 - 16:50 Bin Wu

Simulating particle production from classical fields using quantum computation

16:50 - 17:25 Yahui Chai

Quantum Simulation of Meson Scattering in Lattice Gauge Theory

THU

09:00 - 09:35 Abolfazl Bayat

Quantum many-body sensors

09:35 - 10:10 Ying-Ying Li

Exponentially improved quantum simulation of scalar QFT

10:40 - 11:15 Manuel Schneider

Hadron structure functions in the Hamiltonian framework

11:15 - 11:50 Tianyin Li

Hadron structure by quantum computing

14:00 - 14:35 Weijie Du

Quantum Algorithms for Nuclear Many-Body Structure, Reactions, and Dynamics

14:35 - 15:10 Sandip Maiti

Symmetric mass generation as a multicritical point with enhanced symmetry

15:10 - 15:45 Yoshimasa Hidaka

Hamiltonian lattice gauge theory: Application to nonequilibrium and dense QCD matter

Attractions

