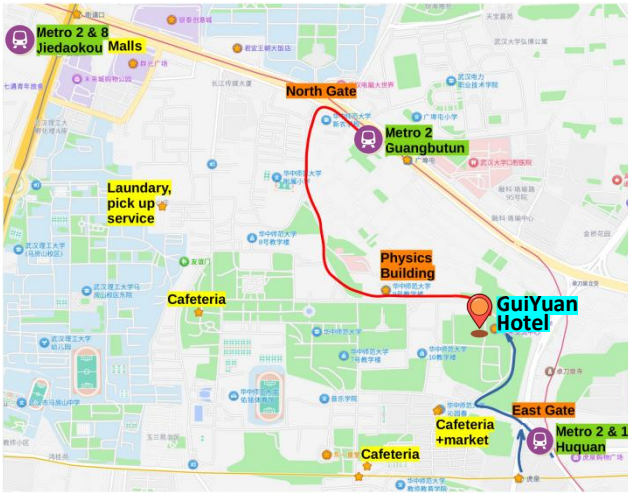
跨能标核物理前沿学术研讨会

Nuclear physics across energy scales

会议手册

Conference Handbook

Venue Map



GuiYuan Hotel (Academic Exchange Center of Central China Normal University)

桂苑宾馆（华中师范大学学术交流中心）

Location: No.152 Luoyu Road, Hongshan District, Wuhan, Hubei, 430079, China

Phone Number: **+86-27-67863418**

Hotel Website:

https://www.trip.com/hotels/wuhan-hotel-detail-1937160/academic-exchange-center-of-central-china-normal-university-guiyuan-hotel/

General Information

Registration Desk:

Sept. 18th 14:00 - 21:00 (Guiyuan Hotel Lobby 桂苑宾馆大堂)

Accommo dation:

GuiYuan Hotel (桂苑宾馆)
Check-in: 24-hour front desk
Breakfast Location: GuiYuan Hotel 1st Floor
Breakfast Time: 7:00 - 9:00
The latest check-out time: 14:00

Venue Location:

Conference Room, GuiYuan Hotel 1st Floor

Dining Locations:

Breakfast: GuiYuan 1st floor
19th lunch: GuiYuan 1st floor
19th dinner: Xiaoguanyuan, on the 5th floor of Qinyuanchun Cafeteria, CCNU（小观园，华师沁园春食堂五楼）
20th lunch buffet: GuiYuan 1st floor
20th dinner: Hujin Restarant（湖锦酒楼·黄鹤楼店）
21st lunch buffet: GuiYuan 1st floor
21st dinner: Xiaoguanyuan（小观园）

Wi-Fi:

Username1: guiyuan Username2: IOPP1
Password1: 67863418 Password2: 12345678

Nuclear Physics Across Energy Scales

Location: GuiYuan 1st Floor Conference Room

Sept. 19-21, 2025 CCNU, Wuhan, China

Day 1 (Friday, 19th) **Theoretical Foundations and Computational Methods**	
09:00-09:30 Opening Ceremony& Group Photo	Welcome addresses： CCNU President Shuangjie Peng Chair: Xin-Nian Wang
Morning Session 1 (9:30-12:30) Chair: Michal Heller	
09:30-10:00	Kenji Fukushima - Surprises and challenges in the QCD phase diagram
10:00-10:30	Giacomo Graziani - Investigating nuclear structure with LHCb and SMOG2
10:30-11:00	Coffee Break (30 minutes)
11:00-11:30	Gert Aarts - Diffusion models for lattice field theory
11:30-12:00	Francesco Becattini -An improved formula for spin polarization at local thermodynamic equilibrium
12:00-12:30	Zi-Wei Lin - Overview for AMPT and nuclear structure
Afternoon Session 2 (14:00-18:00) Chair: Defu Hou	
14:00-14:30	Giuliano Giacalone - Essentials of nuclear imaging at high-energy colliders
14:30-15:00	BingNan Lu - Sign-problem-free quantum Monte Carlo simulation towards heavy nuclei
15:00-15:30	Coffee Break (30 minutes)
15:30-16:00	Masakiyo Kitazawa - Exploring dense nuclear matter in relativistic heavy-ion collisions

16:00-16:30	Evgeny Epelbaum - Can the strong interactions between hadrons be determined using femtoscopy?
16:30-17:00	Bo Zhou - Emergent Cluster Structures in Light Nuclei
17:00-18:00	Group Discussion - Nuclear theoretical computational methods and models
Day 2 (Saturday, 20th) Nuclear Structure and Collision Dynamics	
Morning Session 3 (9:00-12:00) Chair: HuiChao Song	
09:00-09:30	Yu Zhang - Understanding Xe isotopes near A=130 from the prolate-oblate shape phase transition
09:30-10:00	JianJun He - Mystery of Calcium production in the first generation stars
10:00-10:30	Coffee Break (30 minutes)
10:30-11:00	ShiHang Shen - Light nuclei structure by lattice effective field theory
11:00-11:30	ChunJian Zhang - Imaging shapes of atomic nuclei from large to small via high-energy nuclear collisions
11:30-12:00	ShuJun Zhao - Probe the nuclear shape with relativistic heavy ion collisions
Afternoon Session 4 (14:00-17:30) Chair: Raimond Snellings	
14:00-14:30	QiPeng Hu - Probing QGP in light-ion collisions with ATLAS
14:30-15:00	Piotr Bożek - Small scale fluctuations and flow correlations
15:00-15:30	Coffee Break (30 minutes)
15:30-16:00	Zhen Zhang - Resolving the PREX-CREX puzzle in nuclear density functional theory
16:00-16:30	Hiroyuki Sagawa - Octupole correlations in super-deformed bands in 56Ni
16:30-17:30	Group Discussion - Nuclear structure and collision dynamics
Evening 19:00-21:30 Banquet	

Day 3 (Sunday, 21st) Experimental Observations and Frontier Applications	
Morning Session 5 (9:00-12:00) Chair: Guangyou Qin	
09:00-09:30	ZhiHong Ye - SRC study with multiple probes
09:30-10:00	JiangYong Jia - Engineering shape of QGP droplets by comparing flow in small symmetric-asymmetric collisions
10:00-10:30	Coffee Break (30 minutes)
10:30-11:00	PengWei Zhao - Machine learning density functional theory for atomic nuclei
11:00-11:30	Kouichi Hagino - Probing nuclear structure in heavy-ion reactions: similarities between subbarrier fusion and relativistic HIC
11:30-12:00	Chang Xu - Alpha Cluster Formation and Decay in Nuclei
Afternoon Session 6 (14:00-16:40) Chair: Long- gang Pang	
14:00-14:30	Takashi Nakatsukasa - Fermi operator expansion method for nuclei and inhomogeneous nuclear matter at finite temperature
14:30-15:00	Wilke van der Schee - A theory discussion on new results from oxygen and neon collisions at the LHC
15:00-15:30	Coffee Break (30 minutes)
15:30-16:30	Group Discussion - Experimental observations and future perspectives
16:30-16:40	Closing Ceremony (10 minutes)

Website: https://indico.ihep.ac.cn/event/25083/

https://c3nt.ccnu.edu.cn/

Email: c3nt@ccnu.edu.cn

Invited speakers

Gert Aarts	Swansea University
Francesco Becattini	Università di Firenze
Piotr Bożek	AGH University of Krakow
Evgeny Epelbaum	Ruhr University Bochum
Kenji Fukushima	The University of Tokyo
Giuliano Giacalone	CERN
Giacomo Graziani	INFN, Sezione di Firenze
Kouichi Hagino	Kyoto University
Jianjun He	Fudan University
Qipeng Hu	University of Science and Technology of China
Jiangyong Jia	Stony Brook University
Masakiyo Kitazawa	YITP, Kyoto University
Zi-wei Lin	East Carolina University
Bingnan Lu	Graduate School of China Academy of Engineering Physics
Takashi Nakatsukasa	University of Tsukuba
Hiroyuki Sagawa	RIKEN/University of Aizu
Shihang Shen	Beihang University
Wilke Van Der Schee	CERN / Utrecht University
Chang Xu	Nanjing University
Zhihong Ye	Tsinghua University
Chunjian Zhang	Fudan University
Yu Zhang	Liaoning Normal University
Zhen Zhang	Sun Yat-sen University
Pengwei Zhao	Peking University
Shujun Zhao	Sophia University
Bo Zhou	FuDan University

Organizing Committee

Giuliano Giacalone	CERN
Jiangyong Jia	Stony Brook University
Xiaofeng Luo	Central China Normal University
Bingnan Lv	Graduate School of China Academy of Engineering Physics
Guoliang Ma	Fudan University
Yugang Ma	Fudan University
Yifei Niu	LanZhou University
Long-gang Pang (Chair)	Central China Normal University
Huichao Song (Co-chair)	Peking University
Yang Sun	ShangHai Jiao Tong University
Simin Wang (Co-chair)	Fudan University
Xin-Nian Wang	Central China Normal University
Xiaofei Yang	Peking University
Jiangming Yao	Sun Yat-sen University
Chunjian Zhang	Fudan University
Pengwei Zhao	Peking University
Shangui Zhou	Institute of Theoretical Physics, Chinese Academy of Sciences

Introduction to C3NT

Mission:

The Central China Center for Nuclear Theory (C3NT) in the Institute of Particle Physics (IOPP) at the Central China Normal University (CCNU) is designed to provide an open environment that is conducive for cutting-edge research and collaboration in the forefront of nuclear theory and phenomenology with close contact with experiments. These areas of research will cover :

- Nuclear structure
- Nuclear matter under extreme conditions
- Hadron physics
- Nuclear astrophysics and fundamental symmetry
- Quantum computing and AI in nuclear physics

Located in the city of Wuhan at the heart of mainland China with convenient and direct connections to many cities throughout China and Asia, the Center serves as a platform for exchange of new ideas, theoretical and numerical tools with short and long workshops, encouraging collaboration with focused program and training of young scientists with the annual Huada School on QCD. With diverse and vigorous local research programs in IOPP and participating institutions, the Center will also be a hub for regional collaboration among members of participating institutions fermented through the interaction with the international community at the Center.

Programs:

Programs will be selected by the Board of Directors from proposals solicited through annual calls for proposals. Short workshops can be submitted and approved throughout the year based on interest and programs committed for the current year.

Long workshops: Workshops for up to three weeks on selected topics of current interest. Participants are by invitation only selected by the organizers and are required to stay for at least one week. Ample time will be set aside for discussions and collaboration with only several talks each day. The workshop can have a one-day symposium during the program highlighting the work of participants.

Short workshops: Workshops for a few days on topics of current and urgent interest. Participants are by invitation only selected by the organizers.

Huada School on QCD: An annual school which aims to provide basic training in strong interaction physics and related areas for graduate students, postdocs and young researchers in the field of high-energy nuclear and particle physics. The school is normally limited to about 60 participants and focuses on a selected theme each year.

Regional Meetings: The Center will host one or two regional meetings each year to promote regional collaborations and exchange.

Committee & Admin

Administration

Director: Xin-Nian Wang

Deputy Director: Long-gang Pang

Scientific Secretary:

Qiang Yuan, Xiangyu Shui

Board of Directors (alphabetically)

The Board selects and approves proposals for programs submitted to the Center. The Board is also invited to give advice on the Huada School on QCD, local research programs in nuclear theory and other activities at the Center.

- Gert Aarts (Swansea, UK)
- Fengkun Guo (ITP, CN)
- Tetsufumi Hirano (Sophia U, JP)
- Suhoung Lee (Yonsei U, KR)
- Guy Moore ((TU Darmstadt, DE)
- Huichao Song (PKU, CN)
- Werner Vogelsang (Tuebingen, DE)
- Urs Wiedemmen (CERN, CH)
- Furong Xu (PKU, CN)

Scientific Advisory Committee

Members of the Committee are invited to participate in future programs at the Center and provide advice on the topic of the future workshops,

schools and the local research activities.

- Sinya Aoki (Kyoto U, JP)
- Jean-Paul Blaizot (Saclay, FR)
- Ronggeng Cai (NBU, CN)
- Elena Gonzalez Ferreiro (USC, ES)
- Kenji Fukushima (U Tokyo, JP)
- Sourendu Gupta (TIFR, IN)
- Fritiof Karsch (Bielefeld, DE)
- Zuo-tang Liang (SDU, CN)
- Huey-Wen Lin (MSU, US)
- Yeunhwan Lim(Yonsei, KR)
- Weiping Liu (SUSTech, CN)
- Maria Paola Lombardo (INFN Florence, IT)
- Ming-xing Luo (Beijing CSRC, CN)
- Boqiang Ma (ZZU, CN)
- Yugang Ma (Fudan, CN)
- Larry McLerran (UW, US)
- Ulf-G. Meissner (U Bonn, DE)
- Jie Meng (PKU, CN)
- Berndt Muller (Duke, US)
- Krishina Rajagopal (MIT, US)
- Michael Ramsey-Musolf (TDLI, CN)
- Krystof Redlich (UWR, PL)
- Zhongzhou Ren (Tongji, CN)
- Dirk Rischke (Frankfurt, DE)
- Enke Wang (SCNU, CN)
- Qun Wang (USTC, CN)

- Qiang Zhao (IHEP, CN)
- Shan-Gui Zhou (ITP, CH)
- Bingsong Zou (Tsinghua, CN)
- Pengfei Zhuang (Tsinghua, CN)

Regional Committee

Representatives from selected universities in central China for coordination of programs and collaboration.

- Wei-Tian Deng (HUST)
- Wei Dai (CUG)
- Jianyou Guo (AHU)
- Xiaohua Li (USC)
- Tan Luo (HNU)
- Chunwang Ma (Henan NU)
- Shi Pu (USTC)
- En Wang (ZZU)
- Xinyang Wang (AUST)
- Xiaonu Xiong (CSU)
- Xianhui Zhong (Hunan NU)
- Zhi-Qing Zhang (HAUT)

Central China
Center for Nuclear Theory
华中核理论中心