

The QCD Phase Diagram: From Theory to Experimental Signatures

Report of Contributions

Contribution ID: **10**

Type: **not specified**

Welcome speech

Wednesday, 8 October 2025 08:40 (10 minutes)

Presenter: Prof. WANG, Zheng-xiong

Session Classification: Session I

Contribution ID: 11

Type: **not specified**

Selected Results from RHIC BES-II

Wednesday, 8 October 2025 08:50 (40 minutes)

Primary author: XU, Nu (CCNU)

Presenter: XU, Nu (CCNU)

Session Classification: Session I

Contribution ID: **12**

Type: **not specified**

TBA

Wednesday, 8 October 2025 09:30 (40 minutes)

Primary author: PAWLOWSKI, Jan M. (Heidelberg University)

Presenter: PAWLOWSKI, Jan M. (Heidelberg University)

Session Classification: Session I

Contribution ID: 13

Type: **not specified**

Search for the QCD Critical Endpoint at a Low Temperature from Lattice QCD

Wednesday, 8 October 2025 10:40 (40 minutes)

Primary author: DING, Heng-Tong (Central China Normal University)

Presenter: DING, Heng-Tong (Central China Normal University)

Session Classification: Session II

Contribution ID: 14

Type: **not specified**

Phase diagram at intermediate densities: constraints from lattice QCD

Wednesday, 8 October 2025 11:20 (40 minutes)

Primary author: BORSANYI, Szabolcs (University of Wuppertal)

Presenter: BORSANYI, Szabolcs (University of Wuppertal)

Session Classification: Session II

Contribution ID: 15

Type: **not specified**

Large density QCD phase structure from strangeness fluctuations

Wednesday, 8 October 2025 12:00 (40 minutes)

Primary author: PAROTTO, Paolo (Università and INFN Torino)

Presenter: PAROTTO, Paolo (Università and INFN Torino)

Session Classification: Session II

Contribution ID: 16

Type: **not specified**

Probing Nucleon-Nucleon Short Range Correlations by Bremsstrahlung gamma-rays in Heavy Ion Collisions

Wednesday, 8 October 2025 14:00 (40 minutes)

Primary author: Prof. XIAO, Zhigang

Presenter: Prof. XIAO, Zhigang

Session Classification: Session III

Contribution ID: 17

Type: **not specified**

Manifestation of scale symmetry in medium

Wednesday, 8 October 2025 14:40 (40 minutes)

Primary author: MA, Yong-Liang (Theoretical Physics Center for Science Facilities, CAS.)

Presenter: MA, Yong-Liang (Theoretical Physics Center for Science Facilities, CAS.)

Session Classification: Session III

Contribution ID: **18**

Type: **not specified**

TBA

Wednesday, 8 October 2025 15:20 (30 minutes)

Primary author: GEISSEL, Andreas (TU Darmstadt)

Presenter: GEISSEL, Andreas (TU Darmstadt)

Session Classification: Session III

Contribution ID: **19**

Type: **not specified**

Probing QCD phase structure and thermodynamics via finite density observables

Wednesday, 8 October 2025 16:20 (30 minutes)

Primary author: Dr LU, Yi

Presenter: Dr LU, Yi

Session Classification: Session IV

Contribution ID: **20**

Type: **not specified**

TBA

Wednesday, 8 October 2025 16:50 (30 minutes)

Primary author: Dr SATTLER, Franz

Presenter: Dr SATTLER, Franz

Session Classification: Session IV

Contribution ID: 21

Type: **not specified**

Emergent conformality in dense QCD matter: some lessons from a holographic QCD model

Thursday, 9 October 2025 08:30 (40 minutes)

Primary author: FUKUSHIMA, Kenji (The University of Tokyo)

Presenter: FUKUSHIMA, Kenji (The University of Tokyo)

Session Classification: Session I

Contribution ID: 22

Type: **not specified**

Determination of High-Density Symmetry Energy in the Multi-Messenger Era

Thursday, 9 October 2025 09:10 (40 minutes)

Primary author: CHEN, Lie-Wen (S)

Presenter: CHEN, Lie-Wen (S)

Session Classification: Session I

Contribution ID: 23

Type: **not specified**

Chiral phase transition under rotation and acceleration

Thursday, 9 October 2025 09:50 (40 minutes)

Primary author: HUANG, Xu-Guang (Fudan University)

Presenter: HUANG, Xu-Guang (Fudan University)

Session Classification: Session I

Contribution ID: 24

Type: **not specified**

Searching for rare particles in heavy ion collisions

Thursday, 9 October 2025 10:50 (40 minutes)

Primary author: ZHUANG, Pengfei (Tsinghua University)

Presenter: ZHUANG, Pengfei (Tsinghua University)

Session Classification: Session II

Contribution ID: 25

Type: **not specified**

QCD phase transitions at high baryon density

Thursday, 9 October 2025 11:30 (40 minutes)

Primary author: GAO, fei (Beijing Institute of technology)

Presenter: GAO, fei (Beijing Institute of technology)

Session Classification: Session II

Contribution ID: 26

Type: **not specified**

Fluctuations and correlations of quark spin near CEP

Thursday, 9 October 2025 12:10 (30 minutes)

Primary author: Dr CHEN, Hao-Lei

Presenter: Dr CHEN, Hao-Lei

Session Classification: Session II

Contribution ID: 27

Type: **not specified**

Complex heavy quark potential from lattice QCD - where do we stand?

Thursday, 9 October 2025 14:00 (40 minutes)

Primary author: ROTHKOPF, Alexander (Albert Einstein Center for Fundamental Physics)

Presenter: ROTHKOPF, Alexander (Albert Einstein Center for Fundamental Physics)

Session Classification: Session III

Contribution ID: 28

Type: **not specified**

The quark spectral function and (heavy) quark diffusion

Thursday, 9 October 2025 14:40 (30 minutes)

Primary author: Dr WESSELY, Jonas

Presenter: Dr WESSELY, Jonas

Session Classification: Session III

Contribution ID: 29

Type: **not specified**

First Principle QCD within fRG approach

Thursday, 9 October 2025 15:10 (30 minutes)

Primary author: Dr HUANG, Chuang

Presenter: Dr HUANG, Chuang

Session Classification: Session III

Contribution ID: 30

Type: **not specified**

Correlations and fluctuations in a magnetized quark matter with and without inverse magnetic catalysis effect at finite temperature and density

Thursday, 9 October 2025 16:00 (40 minutes)

Primary author: MAO, Shijun (Department of physics of Tsinghua University)

Presenter: MAO, Shijun (Department of physics of Tsinghua University)

Session Classification: Session IV

Contribution ID: 31

Type: **not specified**

Leading-Order QCD EoS in Strong Magnetic Fields at Nonzero Baryon Chemical Potential

Thursday, 9 October 2025 16:40 (30 minutes)

Primary author: KUMAR, Arpith (Central China Normal University)

Presenter: KUMAR, Arpith (Central China Normal University)

Session Classification: Session IV

Contribution ID: 32

Type: **not specified**

Finite-volume analysis and universal scaling signatures near the chiral phase transition in (2+1)-flavor QCD

Thursday, 9 October 2025 17:10 (30 minutes)

Primary author: MITRA, Sabarnya (Bielefeld University)

Presenter: MITRA, Sabarnya (Bielefeld University)

Session Classification: Session IV

Contribution ID: 33

Type: **not specified**

QCD phase transitions under extreme conditions

Friday, 10 October 2025 08:30 (40 minutes)

Primary author: Prof. HUANG, Mei

Presenter: Prof. HUANG, Mei

Session Classification: Session I

Contribution ID: **34**

Type: **not specified**

TBA

Friday, 10 October 2025 09:10 (40 minutes)

Primary author: MA, Guo-Liang (Fudan University)

Presenter: MA, Guo-Liang (Fudan University)

Session Classification: Session I

Contribution ID: 35

Type: **not specified**

TBA

Friday, 10 October 2025 09:50 (40 minutes)

Primary author: RENNECKE, Fabian (Justus Liebig University Giessen)

Presenter: RENNECKE, Fabian (Justus Liebig University Giessen)

Session Classification: Session I

Contribution ID: **36**

Type: **not specified**

TBA

Friday, 10 October 2025 10:50 (40 minutes)

Primary author: LIU, Yuxin (PKU)

Presenter: LIU, Yuxin (PKU)

Session Classification: Session II

Contribution ID: 37

Type: **not specified**

FRG study of chiral phase transition with repulsive interactions

Friday, 10 October 2025 11:30 (40 minutes)

Primary author: HOU, Defu (CCNU)

Presenter: HOU, Defu (CCNU)

Session Classification: Session II

Contribution ID: 38

Type: **not specified**

transport properties and phase diagram of nuclear matter

Friday, 10 October 2025 12:10 (40 minutes)

Primary author: Prof. XU, Jun

Presenter: Prof. XU, Jun

Session Classification: Session II

Contribution ID: 39

Type: **not specified**

Effects of Chiral Phase Transition on Light Nuclei and Dilepton Production

Friday, 10 October 2025 14:00 (40 minutes)

Primary author: SUN, KaiJia (Institute of Modern Physics, Fudan University)

Presenter: SUN, KaiJia (Institute of Modern Physics, Fudan University)

Session Classification: Session III

Contribution ID: 40

Type: **not specified**

Stochastic charge transport in relativistic hydrodynamics

Friday, 10 October 2025 14:40 (30 minutes)

Primary author: FU, Baochi (Peking University)

Presenter: FU, Baochi (Peking University)

Session Classification: Session III

Contribution ID: 41

Type: **not specified**

Dissecting the moat regime at low energies

Friday, 10 October 2025 15:10 (30 minutes)

Primary author: Dr YIN, Shi

Presenter: Dr YIN, Shi

Session Classification: Session III

Contribution ID: 42

Type: **not specified**

Distangling the nature of radial flow and the momentum fluctuations at the RHIC-STAR experiment

Friday, 10 October 2025 16:00 (40 minutes)

Primary author: ZHANG, Chunjian (Fudan University)

Presenter: ZHANG, Chunjian (Fudan University)

Session Classification: Session IV

Contribution ID: 43

Type: **not specified**

Dileptons and Direct Photons in Beam Energy Scan: Recent and Future

Friday, 10 October 2025 16:40 (40 minutes)

Primary author: Prof. YANG, Chi

Presenter: Prof. YANG, Chi

Session Classification: Session IV

Contribution ID: 44

Type: **not specified**

Dilepton emission as a new probe of critical end point

Friday, 10 October 2025 17:20 (40 minutes)

Primary author: CAO, Gaoqing (Sun Yat-sen University)

Presenter: CAO, Gaoqing (Sun Yat-sen University)

Session Classification: Session IV

Contribution ID: 45

Type: **not specified**

QCD equation of state from deep learning

Saturday, 11 October 2025 08:30 (40 minutes)

Primary author: PANG, LongGang (Central China Normal University)

Presenter: PANG, LongGang (Central China Normal University)

Session Classification: Session I

Contribution ID: 46

Type: **not specified**

Discriminating the signal of critical point from the conservation background

Saturday, 11 October 2025 09:10 (40 minutes)

Primary author: SHI, Shuzhe (Tsinghua University)

Presenter: SHI, Shuzhe (Tsinghua University)

Session Classification: Session I

Contribution ID: 47

Type: **not specified**

Baryon Electric Charge Correlation as a Magnetometer of QCD

Saturday, 11 October 2025 09:50 (30 minutes)

Primary author: Dr GU, Jin-Biao

Presenter: Dr GU, Jin-Biao

Session Classification: Session I

Contribution ID: 48

Type: **not specified**

model H in stochastic fluids

Saturday, 11 October 2025 10:40 (40 minutes)

Primary author: CHAO, Jingyi (jiangxi normal u)

Presenter: CHAO, Jingyi (jiangxi normal u)

Session Classification: Session II

Contribution ID: 49

Type: **not specified**

Baryon-strangeness Correlation and QCD Phase diagram

Saturday, 11 October 2025 11:20 (30 minutes)

Primary author: Dr WEN, Rui

Presenter: Dr WEN, Rui

Session Classification: Session II

Contribution ID: 50

Type: **not specified**

Workshop closing

Saturday, 11 October 2025 11:50 (10 minutes)

Primary author: Prof. FU, Wei-jie

Presenter: Prof. FU, Wei-jie

Session Classification: Session II