

# **New developments in studies of the QCD phase diagram**

## **Report of Contributions**

Contribution ID: 1

Type: **not specified**

# Experimental Study of QCD Phase Diagram in Heavy-ion Collisions at RHIC

*Monday 9 September 2024 10:00 (40 minutes)*

**Presenter:** LUO, Xiaofeng (Central China Normal University)

**Session Classification:** Critical point

Contribution ID: 2

Type: **not specified**

## Registration

*Monday 9 September 2024 09:00 (30 minutes)*

Contribution ID: 3

Type: **not specified**

## **Locating the critical end point and the phase boundary of QCD from first principle QCD**

*Monday 9 September 2024 11:10 (40 minutes)*

**Presenter:** PAWLOWSKI, Jan M. (University of Heidelberg)

**Session Classification:** Critical point

Contribution ID: 4

Type: **not specified**

## QCD critical point in the era of BES II

*Monday 9 September 2024 11:50 (40 minutes)*

**Presenter:** FU, Wei-jie

**Session Classification:** Critical point

Contribution ID: 5

Type: **not specified**

## Lee-Yang zeros and the QCD phase diagram

*Monday 9 September 2024 14:50 (40 minutes)*

**Presenter:** SCHMIDT, Christian (Bielefeld University)

**Session Classification:** Critical point

Contribution ID: 6

Type: **not specified**

## QCD critical point, fluctuations and hydrodynamics

*Monday 9 September 2024 15:30 (40 minutes)*

**Presenter:** STEPHANOV, Mikhail

**Session Classification:** Critical point

Contribution ID: 7

Type: **not specified**

## **Strangeness neutrality and QCD phase structure from functional renormalization group**

*Monday 9 September 2024 16:40 (30 minutes)*

**Presenter:** WEN, Rui (University of Chinese Academy of Sciences)

**Session Classification:** Critical point



Contribution ID: 8

Type: **not specified**

# Exploring Baryon Fluctuations with Coulomb Gauge QCD

*Monday 9 September 2024 17:10 (30 minutes)*

**Presenter:** SHUKLA, Udit (University of Wroclaw)

**Session Classification:** Critical point

Contribution ID: 9

Type: **not specified**

## **Dense QCD matter constrained by astrophysical observation**

*Tuesday 10 September 2024 09:00 (40 minutes)*

**Presenter:** FUKUSHIMA, Kenji (The University of Tokyo)

**Session Classification:** QCD at high density

Contribution ID: **10**

Type: **not specified**

## Reaching conformality in neutron stars

*Tuesday 10 September 2024 09:40 (40 minutes)*

**Presenter:** MARCZENKO, Michał (University of Wrocław)

**Session Classification:** QCD at high density

Contribution ID: 11

Type: **not specified**

## Finite density QCD as an inverse problem

*Tuesday 10 September 2024 10:50 (40 minutes)*

**Presenter:** DI RENZO, Francesco (Università di Parma and INFN)

**Session Classification:** QCD at high density

Contribution ID: 12

Type: **not specified**

## What is the IR Phase Really About?

*Tuesday 10 September 2024 11:30 (40 minutes)*

**Presenter:** HORVATH, Ivan (Nuclear Physics Institute, Řež-Prague & University of Kentucky)

**Session Classification:** Chiral Phase Transition

Contribution ID: 13

Type: **not specified**

## Chiral symmetry breaking in hot QCD

*Tuesday 10 September 2024 14:30 (40 minutes)*

**Presenter:** KOVACS, Tamas (Eotvos Lorand University, Budapest)

**Session Classification:** Chiral Phase Transition

Contribution ID: 14

Type: **not specified**

# **Microscopic Encoding of Macroscopic Universality: Scaling properties of Dirac Eigenspectra near QCD Chiral Phase Transition**

*Tuesday 10 September 2024 15:10 (40 minutes)*

**Presenter:** HUANG, Wei-Ping (Central China Normal University)

**Session Classification:** Chiral Phase Transition

Contribution ID: 15

Type: **not specified**

## **Towards a parameter-free determination of QCD critical exponents and chiral phase transition temperature**

*Tuesday 10 September 2024 16:20 (30 minutes)*

**Presenter:** MITRA, Sabarnya (Bielefeld University)

**Session Classification:** Chiral Phase Transition



Contribution ID: 16

Type: **not specified**

# Quark pairing and the strong coupled quark-gluon plasma

*Tuesday 10 September 2024 16:50 (30 minutes)*

**Presenter:** LU, Yi (Peking University)

**Session Classification:** Chiral Phase Transition

Contribution ID: 17

Type: **not specified**

## **A toy model for chiral symmetry restoration**

**Presenter:** PISARSKI, Robert (Brookhaven National Laboratory)

Contribution ID: **18**

Type: **not specified**

## **Veneziano's ghost and the chiral phase transition**

*Wednesday 11 September 2024 09:00 (40 minutes)*

**Presenter:** PISARSKI, Robert (Brookhaven National Laboratory)

**Session Classification:** Chiral Phase Transition

Contribution ID: **19**

Type: **not specified**

# The chiral phase transition in many flavour QCD

*Wednesday 11 September 2024 09:40 (40 minutes)*

**Presenter:** PHILIPSEN, Owe

**Session Classification:** Chiral Phase Transition

Contribution ID: 20

Type: **not specified**

## Finite temperature QCD explored with chiral fermions

*Wednesday 11 September 2024 10:50 (40 minutes)*

**Presenter:** AOKI, Yasumichi (RIKEN)

**Session Classification:** QCD Thermodyanmics

Contribution ID: 21

Type: **not specified**

## **Finite temperature QCD from lattice simulations with overlap fermions**

*Wednesday 11 September 2024 11:30 (40 minutes)*

**Presenter:** KOTOV, Andrey

**Session Classification:** QCD Thermodyanmics

Contribution ID: 22

Type: **not specified**

## **Three-flavour QCD phase transition with Mobius domain-wall fermions**

*Wednesday 11 September 2024 14:30 (30 minutes)*

**Presenter:** ZHANG, Yu (Bielefeld University)

**Session Classification:** QCD Thermodyanmics

Contribution ID: 23

Type: **not specified**

# Superfluids of parity-doubled baryons in neutron stars

*Wednesday 11 September 2024 15:00 (40 minutes)*

**Presenter:** SASAKI, Chihiro (University of Wroclaw & SKCM2 at Hiroshima University)

**Session Classification:** QCD Thermodyanmics



Contribution ID: 24

Type: **not specified**

## Recent progress on the QCD phase diagram

*Thursday 12 September 2024 09:00 (40 minutes)*

**Presenter:** GUENTHER, Jana N. (University of Wuppertal)

**Session Classification:** QCD Thermodyanmics

Contribution ID: 25

Type: **not specified**

## **New Insights into Charm Thermodynamics from the Lattice Continuum Limit**

*Thursday 12 September 2024 09:40 (40 minutes)*

**Presenter:** SHARMA, Sipaz (Bielefeld University)

**Session Classification:** QCD Thermodyanmics

Contribution ID: 26

Type: **not specified**

## Chiral restoration and deconfinement phase transitions under external magnetic field

*Thursday 12 September 2024 10:50 (40 minutes)*

**Presenter:** MAO, Shijun (Xi'an Jiaotong University)

**Session Classification:** QCD in external fields

Contribution ID: 27

Type: **not specified**

## **Fluctuations of conserved charges in strong magnetic fields with (2+1)-flavor QCD**

*Thursday 12 September 2024 11:30 (30 minutes)*

**Presenter:** GU, Jin-Biao (Central China Normal University)

**Session Classification:** QCD in external fields

Contribution ID: 28

Type: **not specified**

## **QCD EoS in strong magnetic fields and nonzero baryon density**

*Thursday 12 September 2024 14:30 (30 minutes)*

**Presenter:** KUMAR, Arpith (Central China Normal University)

**Session Classification:** QCD in external fields

Contribution ID: 29

Type: **not specified**

# **The Roberge-Weiss transition in $N_f = 2+1$ QCD with background magnetic fields**

*Thursday 12 September 2024 15:00 (30 minutes)*

**Presenter:** ZAMBELLO, Kevin (University of Pisa and INFN)

**Session Classification:** QCD in external fields

Contribution ID: 30

Type: **not specified**

## QCD phase diagram in the $T - eB$ plane for varying pion mass

*Thursday 12 September 2024 16:00 (30 minutes)*

**Presenter:** CHOWDHURY, Aminul Islam (University of Chinese Academy of Sciences)

**Session Classification:** QCD in external fields

Contribution ID: **31**

Type: **not specified**

## **Chiral Soliton Lattice turns into 3D crystal**

*Thursday 12 September 2024 16:30 (40 minutes)*

**Presenter:** SCHMITT, Andreas (University of Southampton)

**Session Classification:** QCD in external fields



Contribution ID: 32

Type: **not specified**

# Fluctuations of conserved charges from lattice and HRG and the freezeout in HIC

*Friday 13 September 2024 11:10 (40 minutes)*

**Presenter:** PETRECKZY, Peter (BNL)

**Session Classification:** QCD and HRG

Contribution ID: 33

Type: **not specified**

## **In-medium effects from S-matrix**

*Friday 13 September 2024 10:30 (40 minutes)*

**Presenter:** LO, Pok Man (University of Wroclaw)

**Session Classification:** QCD and HRG

Contribution ID: 34

Type: **not specified**

## Work in progress on analytic continuation from imaginary chemical potential

*Friday 13 September 2024 09:00 (30 minutes)*

**Presenter:** ALIBERTI, Marco (University of Parma and INFN - Istituto Nazionale di Fisica Nucleare)

**Session Classification:** QCD and Machine Learning

Contribution ID: 35

Type: **not specified**

## Testing machine learning against finite size scaling using MAFs

*Friday 13 September 2024 09:30 (30 minutes)*

**Presenter:** SINGH, Simran (Universität Bielefeld)

**Session Classification:** QCD and Machine Learning