



EMMI Workshop

Critical Fluctuations Near the QCD Phase Boundary in Relativistic Nuclear Collisions



College of Physical Science and Technology
Central China Normal University
Wuhan, China
October 10 – 13, 2017

Scientific Program (Building 9, 409)

Tuesday, October 10

Chair: Nu Xu

- 9:00 – 9:40 Anar Rustamov (ANAS, Azerbaijan)
“Experimental Status: ALICE”
- 9:40 – 10:20 Xiaofeng Luo (CCNU, China)
“Experimental Status: STAR”
- 10:20 – 10:50 *Coffee Break*
- 10:50 – 11:30 Adam Bzdak (AGH Univ. of Sci. and Tech., Poland)
“Making Sense of (anti)proton Cumulants and Correlation Functions at RHIC”
- 11:30 – 12:10 ShinIchi Esumi (Tsukuba University, Japan)
“Unfolding the Unknown Net-distribution with Volume Fluctuation”
- 12:10 – 14:00 *Lunch Break*
- Chair:* Feng Liu
- 14:00 – 14:40 Bedangadas Mohanty (NISER, India)
“Hadron Resonance Gas Model, Fluctuations and the QCD Phase Diagram”
- 14:40 – 15:20 Krzysztof Redlich (Wroclaw University, Poland)
“Fluctuation Observables and Equilibration in Heavy Ion Collisions”

- 15:20 – 16:00 *Coffee Break*
- 16:00 – 16:40 Yuxin Liu (PKU, China)
“CEP of the QCD Phase Transition via a Non-perturbative QCD Approach”
- 16:40 – 17:20 Masakiyo Kitazawa (Osaka University, Japan)
“Critical Enhancement and Diffusion of Non-Gaussian Fluctuations”
- 17:20 – 18:00 **Discussions**
- 18:00 – 20:00 *Reception (Guiyuan Guest House)*

Wednesday, October 11

Chair: Peter Braun-Munzinger

- 9:00 – 9:40 Kenji Fukushima (Tokyo University, Japan)
“Electric Fluctuations and Conductivity at Finite Density Under a Magnetic Field”
- 9:40 – 10:20 Pengfei Zhuang (Tsinghua University, China)
“Equal-time Chiral Transport Theory in the External Electromagnetic Field”
- 10:20 – 10:50 *Coffee Break*
- 10:50 – 11:30 Yasushi Nara (Akita International University, Japan)
“Effects of Phase Transition on Collective Flows From a Microscopic Transport Model”
- 11:30 – 12:10 Marcus Bluhm (University of Wroclaw, Poland)
“Diffusive Dynamics of Critical Fluctuations”
- 12:10 – 14:00 *Lunch Break*
- Chair:* Heng-Tong Ding
- 14:00 – 14:40 Misha Stephanov (UIC, USA)
“QCD Critical Point: Fluctuations and Hydrodynamics”
- 14:40 – 15:20 Frithjof Karsch (Bielefeld University, Germany/BNL, USA)
“Conserved Charge Fluctuations at Vanishing and Non-vanishing Baryon Chemical Potential ”
- 15:20 – 16:00 *Coffee Break*

- 16:00 – 16:40 Claudia Ratti (Houston University, USA)
“Fluctuations from Lattice QCD”
- 16:40 – 17:20 Mark Gorenstein (BITP, Ukrain)
“van der Waals Interactions Between (anti)baryons:
From Nuclear Matter to Lattice QCD”
- 17:20 – 18:00 **Discussions**
- 18:30 – 20:00 *Conference Dinner (TaiZi Restaurant)*

Thursday, October 12

Chair: Pengfei Zhuang

- 9:00 – 9:40 Peter Braun-Munzinger (EMMI, Germany)
“Particle Production of Light (u,d,s)-quarks at the
QCD Phase Boundary”
- 9:40 – 10:20 Johanna Stachel (Heidelberg University, Germany)
“Heavy Quarks and the QCD Phase Boundary”
- 10:20 – 10:50 *Coffee Break*
- 10:50 – 11:30 Rene Bellwied (Houston University, USA)
“Chemical Freeze-out Parameters from Conserved Charge
Fluctuations at RHIC and LHC”
- 11:30 – 12:10 Huichao Song (PKU, China)
“Critical and Non-critical Fluctuations at RHIC BES”
- 12:10 – 14:00 *Lunch Break*
- Chair:* Xiaofeng Luo
- 14:00 – 14:40 Jan Pawłowski (Heidelberg University, Germany)
“Transport Coefficients and the QCD Phase Structure”
- 14:40 – 15:20 Viktor Begun (Warsaw University of Technology, Poland)
“Multi Moment Cancellation of Participant Fluctuations”
- 15:20 – 16:00 *Coffee Break*
- 16:00 – 16:40 Larry McLerran (INT, USA)
“The Fragmentation Region at Ultra-high Energies”
- 16:40 – 17:20 Claude Pruneau (Wayne State University, USA)

“Lessons from Differential Correlation Measurements”

17:20 – 18:00 *Discussions*

18:00 – 19:00 *Dinner (Guiyuan Guest House)*

Friday, October 13

Chair: *Anar Rustamov*

9:00 – 9:40 Defu Hou (CCNU, China)
“Functional Renormalization Group Study of Phase Diagram
in the Quark-Meson Model”

9:40 – 10:20 Jun Xu (SINAP, China)
“Investigating the RHIC-BES Physics Based on an Extended
AMPT Model with Mean-field Potentials”

10:20 – 10:50 *Coffee Break*

10:50 – 11:30 Weijie Fu (Dalian University of Sci. and Tech., China)
“QCD Phase Transitions and Baryon Number Fluctuations
within FRG”

11:30 – 12:00 Kaijia Sun (Shanghai JiaoTong University, China)
“Probing QCD Critical Fluctuation from Light Nuclei
Production in Relativistic Heavy-ion Collisions”

12:00 – 14:00 *Lunch Break*

Chair: *Daicui Zhou*

14:00 – 14:30 Gaoqing Cao (Fudan University, China)
“Signals for Critical End Point With an Inhomogeneous Phase
and Mesonic Fluctuations”

14:30 – 15:00 Toshihiro Nonaka (Tsukuba University, Japan)
“Correction Methods for Detector Effect on Cumulants”

15:00 – 15:30 Christoph Herold (Suranaree University of Technology, Thailand)
“Dynamical Cumulants of the Chiral Order Parameter in a
Realistic Heavy-ion Collision Scenario”

15:30 – 16:00 *Coffee Break*

16:00 – 17:30 *Discussions*

17:30 *End of the Workshop*