

# Schedule of the workshop

(all time is in MSK, GMT+3)

## 09.11 Monday

10:50 - 10:55 - Opening address  
10:55 - 11:00 - Technical remarks

### 11:00 - 15:10 - **Strong-interacting matter at finite temperature**

*Discussion leader: Frithjof Karsch*

*Chairperson: Frithjof Karsch*

11:00 - 11:30 Maria Lombardo, “Universal (?) scaling of QCD from Wilson fermions”  
11:30 - 12:00 Anirban Lahiri, “Universal scaling close to chiral limit of QCD”  
12:00 - 12:30 Christian Fischer, “Fluctuations and the QCD phase diagram from functional methods”  
12:30 - 13:00 Angel Gomez Nicola “Advances on the QCD phase diagram from Ward Identities and Effective Theories”  
13:00 - 13:30 Yu Zhang “Correlated Dirac eigenvalues and axial anomaly in chiral symmetric QCD”  
13:30 - 14:00 Aleksi Kurkela, “How can one tell if there is quark matter in neutron stars?”

14:10-15:10 - *Discussion session*

### 19:00-23:10 - **QCD phase diagram under strong external magnetic field**

**(NOTE! late starting time)**

*Discussion leader: Igor Shovkovy*

*Chairperson: Alejandro Ayala*

19:00 - 19:30 Luis Hernandez, “Magnetized QCD phase diagram from the point of view of chiral symmetry restoration”  
19:30 - 20:00 Ricardo Farias, “Neutral meson properties in hot and magnetized quark matter”  
20:00 - 20:30 Efrain Ferrer, “Axion Polariton in Magnetized Dense Quark Matter”  
20:30 - 21:00 Gergely Endrődi, “Magnetic susceptibility of QCD matter”  
21:00 - 21:30 Gergely Markó, “Magnetic field dependence of the NJL coupling from lattice QCD”  
21:30 - 22:00 Massimo D'Elia, “Confinement and deconfinement in a magnetic background field”

22:10-23:10 - *Discussion session*

## 10.11 Tuesday

### 11:00 - 15:10 - **QCD phase diagram in astrophysics**

*Discussion leader: David Blaschke*

*Chairperson: David Blaschke*

11:00 - 11:30 Aleksii Vuorinen, *“Model-independent approach to the neutron-star-matter equation of state”*

11:30 - 12:00 Matthias Hanauske, *“Gravitational-Wave Signatures of the Hadron-Quark Phase Transition in Binary Compact Star Mergers”*

12:00 - 12:30 Andreas Bauswein, *“The hadron-quark phase transition and neutron star mergers”*

12:30 - 13:00 Konstantin Maslov, *“Pasta phase in hybrid hadron-quark stars”*

13:00 - 13:30 Oleksii Ivanitskyi, *“Second look to the Polyakov Loop Nambu-Jona-Lasinio model at finite baryonic density”*

13:30 - 14:00 David Alvarez-Castillo, *“Future Compact star observations that could confirm the existence of a Critical End Point in the QCD phase diagram”*

14:10-15:10 - *Discussion session*

### 16:00-20:40 - **Anomalous transport phenomena and related issues: CME, CSC CVE, ...**

**(celebrating the 80th Birthday of Valentin Zakharov)**

*Discussion leader: Oleg Teryaev*

*Chairperson: Oleg Teryaev*

16:00 - 16:30 Oleg Teryaev, *“Spin and Anomaly”*

16:30 - 17:00 Andrey Kotov, *“Chiral magnetic effect and conductivity of quark-gluon plasma in external magnetic field”*

17:00 - 17:30 Andrey Sadofyev, *“Zilch Vortical Effect, Berry Phase, and Kinetic Theory”*

17:30 - 18:00 Marco Ruggieri, *“Topological charge and chiral density production in the early stage of high energy nuclear collisions”*

18:00 - 18:30 Maxim Chernodub, *“Fermion helicity vs. chirality: transport, thermodynamic, and spin-polarization effects”*

18:30 - 19:00 Valentin Zakharov, *“Heavy-ion physics: Interplay of statistical and field-theoretic approaches”*

19:00 - 19:30 Arkady Vainshtein, *“Massive gravity”*

19:40-20:40 - *Discussion session*

## 11.11 Wednesday

**11:00 - 14:40 - Inhomogeneous phases in strongly interacting matter**

*Discussion leader: Michael Buballa*

*Chairperson: Michael Buballa*

11:00 - 11:30 Stefano Carignano, “*Crystalline chiral condensates in dense quark matter*”

11:30 - 12:00 Martin Steil, “*Inhomogeneous chiral condensates within the Functional Renormalisation Group*”

12:00 - 12:30 Andreas Wipf, “*Inhomogeneous phases of the Gross-Neveu model with a finite number of flavors*”

12:30 - 13:00 Marc Wagner and Lennart Kurth, “*Exploring the existence of inhomogeneous phases in the 2+1-dimensional Gross-Neveu model in the limit of infinitely many flavors*”

13:00 - 13:30 Tomas Brauner, “*Anomaly-induced inhomogeneous phase in QCD-like theories*”

13:40-14:40 - *Discussion session*

**16:00-20:40 - QCD phase structure at non-zero baryon density**

*Discussion leader: Gert Aarts*

*Chairperson: Gert Aarts*

16:00 - 16:30 Jan Pawłowski, “*On the phase structure of QCD*”

16:30 - 17:00 Jan Steinheimer, “*The high density QCD phase diagram: of heavy ion collisions and neutron star mergers*”

17:00 - 17:30 Veronica Dexheimer, “*QCD Phase Diagrams with Charge and Isospin Axes under Heavy-Ion Collision and Stellar Conditions*”

17:30 - 18:00 Jishnu Goswami, “*QCD phase diagram at non-zero real and imaginary chemical potential from lattice QCD*”

18:00 - 18:30 Jana Guenther, “*QCD crossover line at finite chemical potential from the Lattice*”

18:30 - 19:00 Vladimir Skokov, “*Universality driven analytic structure of QCD crossover*”

19:00 - 19:30 Maksim Ulybyshev, “*Structure of the Lefschetz thimbles decomposition of lattice fermion models*”

19:40-20:40 - *Discussion session*

**12.11 Thursday**

**10:00 - 13:40 - Effects of rotation in QCD phase diagram**

**(NOTE! Early starting time)**

*Discussion leader: Xu-Guang Huang*

*Chairperson: Xu-Guang Huang*

10:00 - 10:30 Kenji Fukushima, “*Rotating Relativistic Matter and Angular Momenta*”

10:30 - 11:00 Mei Huang, “*Chiral dynamics and gluodynamics under rotation*”

11:00 - 11:30 Kazuya Mameda, “*Rotational effect versus finite-size effect on chiral phase transition*”

11:30 - 12:00 Arata Yamamoto, “*Rotation on lattices*”

12:00 - 12:30 Victor Braguta, “*Lattice study of rotating gluodynamics*”

12:40-13:40 - *Discussion session*

14:30-18:10 - **Non-zero isospin density and meson condensation**

*Discussion leader: Jens O. Andersen*

*Chairperson: Bastian Brandt*

14:30 - 15:00 Jens O. Andersen, “*Chiral perturbation theory and pion condensation at finite isospin*”

15:00 - 15:30 Massimo Mannarelli, “*Meson condensation in chiral perturbation theory*”

15:30 - 16:00 Bastian Brandt, “*QCD thermodynamics at nonzero isospin asymmetry*”

16:00 - 16:30 Prabal Adhikari, “*Finite Isospin Chiral Perturbation in a Uniform Magnetic Field*”

16:30 - 17:00 Abdul Tawfik, “*QCD phase structure in Polyakov linear-sigma model with non-zero isospin density*”

17:10-18:10 - *Discussion session*

18:30-22:40 - **Phase diagram in the context of heavy-ion collisions**

*Discussion leader: Elena Bratkovskaya*

*Chairperson: Elena Bratkovskaya*

18:30 - 19:00 Olga Soloveva, “*Transport properties of the hot and dense QGP*”

19:00 - 19:30 Volodymyr Vovchenko, “*Probing the QCD equation of state with fluctuations of conserved charges*”

19:30 - 20:00 Dmitry Peresunko, “*Direct photon production in pp, pA and AA collisions*”

20:00 - 20:30 Chihiro Sasaki, “*Probing chiral symmetry restoration with dileptons*”

20:30 - 21:00 Evgeny Zabrodin, “*Transport model approach to  $\Lambda$  and  $\Lambda^-$  polarization in heavy-ion collisions*”

21:10-22:10 - *Discussion session*

**13.11 Friday**

10:00 - 13:10 - **Theoretical ideas and experimental searches of the critical point (NOTE! Early starting time)**

*Discussion leader: Kyrill Bugaev*

*Chairperson: Kyrill Bugaev*

10:00 - 10:30 Xiaofeng Luo, “*Search for the QCD Critical Point in Heavy-ion Collisions at RHIC*”

10:30 - 11:00 Juan Torres-Rincon, “*Pre-clustering near the QCD critical point: nuclear correlations and light-nuclei production*”

11:00 - 11:30 Anatoly Sidorin, “*Status of the NICA project*”

11:30 - 12:00 Oleg Rogachevsky “*Experimental study of QCD phase diagram at NICA energy range*”

12:00 - 12:30 Kyrill Bugaev, “*Phase diagram of strongly interacting matter and how should we study it in heavy ion collisions*”

12:40-13:40 - *Discussion session*

14:00-23:40 --- **Heavy quarks**

*Discussion leader: Carlos Lourenco*

*Discussion leader: Alexey Luchinsky*

*Chairpersons: Carlos Lourenco, Anatoly Likhoded, Alexey Luchinsky*

14:00 - 14:30 Zalak Shah, “*Properties of doubly heavy baryons*”

14:30 - 15:00 Kazem Azizi “*The doubly heavy particles: baryons, tetraquarks and pentaquarks*”

15:00 - 15:30 Mariana Araujo, “*Towards the understanding of quarkonium production through global-fit analyses of LHC data*”

15:30 - 16:00 Pietro Faccioli, “*The fate of quarkonia in heavy-ion collisions at LHC energies: a unified description of the sequential suppression patterns*”

16:00 - 16:30 He Sok Chung, “*Heavy Quarkonium Production in pNRQCD*”

16:30 - 17:00 Wei Chen, “*Fully-heavy tetraquark states and their strong decays into di-charmonia*”

60 min break

18:00 - 18:30 Hai-Tao Shu, “*Transport and spectral properties of heavy quarks from lattice QCD*”

18:30 - 19:00 Vladimir Galkin, “*Heavy tetraquarks in the relativistic quark model*”

19:00 - 19:30 Nizami Abdulov, “*Bottomonia production and polarization in the NRQCD with  $kt$ -factorization*”

30 min break

20:00 - 20:30 Christian Fischer, "*Exotic hadrons from functional methods*"

20:30 - 21:00 Eric Braaten, "*Production of  $X(3872)$  at High Multiplicity*"

21:30 - 22:00 Michael Strickland, "*Bottomonium suppression and elliptic flow from real-time quantum evolution*"

22:00 - 22:30 Peter Petreczky, "*Bottomonium properties at high temperatures from lattice NRQCD*"

22:00 - 22:30 Alexey Luchinsky, "*Doubly Heavy Baryons: Lifetimes and Branching fractions of the Weak Decays*"

22:40-23:40 - *Discussion session*