

**Program of the 2nd Workshop of the Network NA7-HF-QGP
of the European program "STRONG-2020"
and the 'HFHF Theory Retreat 2023'**

28 September – 4 October 2023
Giardini Naxos, Sicily, Italy

28 September, Thursday

Chairman: Marcus Bleicher

9:20 – 9:30 *Opening of Workshop*

9:30 – 10:20 Konrad Tywoniuk (Uni. Bergen)

'Lecture 1: Jets in strongly interacting matter'

10:20 – 10:55 Christian Fischer (Giessen Uni.)

'QCD phase diagram with functional methods'

10:55 - 11:15 *Coffee break*

Chairman: Tom Reichert

11:15 – 11:50 Elena Bratkovskaya (GSI & Uni. Frankfurt)

'Charm dynamics in heavy-ion collisions'

11:50 – 12:25 Jörg Aichelin (SUBATECH, Nantes)

'Heavy flavour production'

12:25 – 13:00 Marcus Bleicher (Uni. Frankfurt)

'Subthreshold charm and strangeness production'

Lunch break

Free discussions

Chairman: Victor Ambrus

17:00 – 17:25 Vincenzo Nigara (Catania Uni.)

'Dynamical attractors in viscous hydrodynamics and full Boltzmann approach'

17:25 – 17:50 Tom Reichert (Uni. Frankfurt)

'Recent results on nuclei and hypernuclei production from the coalescence approach'

17:50 – 18:15 Henry Hirvonen (Uni. Jyväskylä)

'Deep learning for flow observables in ultrarelativistic heavy-ion collisions'

18:15 – 18:40 Jorge Manuel Martínez Vera (Uni. Torino)

'Leveling up quantum trajectories for qqbar'

18:40 – 19:05 Hosein Gholami (TU Darmstadt)

'RG consistent treatment of NJL color-superconductivity'

19:05 – 19:15 Lisa Engel (Uni. Frankfurt)

'Resonance reconstruction in heavy-ion collisions with UrQMD'

19:30 – *Dinner*

29 September, Friday

Chairman: Alexander Lind

- 9:30 – 10:20 Konrad Tywoniuk (Uni. Bergen)
'Lecture 2: Jets in strongly interacting matter'
- 10:20 – 10:55 Klaus Werner (SUBATECH, Nantes)
'Small systems in EPOS4'

10:55 - 11:15 *Coffee break*

Chairman: Renan Hirayama

- 11:15 – 11:50 Salvatore Plumari (Catania Uni.)
'Heavy flavour hadronization'
- 11:50 – 12:25 Marlene Nahrgang (SUBATECH, Nantes)
'Critical fluctuations in heavy-ion collisions'
- 12:25 – 13:00 Krzysztof Redlich / Michał Marczenko (Uni. Wroclaw)
'Higher order fluctuations of net protons in HIC: Parity partners and chiral criticality'

Lunch break

Free discussions

Chairman: Yuuka Kanakubo

- 17:00 – 17:25 Olga Soloveva (Uni. Frankfurt)
'Transport properties of the QGP matter facilitated by Machine learning-based models'
- 17:25 – 17:50 Marc-André Petri (Uni. Wuppertal)
'Investigation of the Columbia Plot in the high mass region'
- 17:50 – 18:15 Jiaxing Zhao (SUBATECH, Nantes)
'Electromagnetic fields and heavy flavor'
- 18:15 – 18:40 Alexander Lind (SUBATECH, Nantes)
'SUBA-Jet: a New Model for Jet Energy Loss in Heavy Ion Collisions'
- 18:40 – 19:05 Martin Rohrmoser (Uni. Krakow)
'Effects of medium expansion on jet transverse momentum broadening'

19:30 – *Dinner*

30 September, Saturday

Chairman: Olga Soloveva

- 9:30 – 10:20 Konrad Tywoniuk (Uni. Bergen)
'Lecture 3: Jets in strongly interacting matter'
- 10:20 – 10:55 Hubert Hansen (IP2I, Lyon)
'Dense nuclear matter modelisations and compact star observations'

10:55 - 11:15 *Coffee break*

Chairman: Henry Hirvonen

11:15 – 11:50 Pol-Bernard Gossiaux (SUBATECH, Nantes)

'Recent news from quarkonia'

11:50 – 12:25 Juan Torres-Rincon (Uni. Valencia)

'TROIA: T-matrix-based ROutline for hAdron femtoscopy'

12:25 – 13:00 Jan Steinheimer (FIAS, Frankfurt)

'Time dependence of fluctuations and light clusters in heavy ion collisions that undergo phase separation at the SIS100'

Lunch break

Free discussions

Chairman: Jan Rais

17:00 – 17:25 Yuuka Kanakubo (Uni. Jyväskylä)

'Interplay between core and corona from small to large colliding systems'

17:25 – 17:50 Ilia Grishmanovskii (Uni. Frankfurt)

'Exploring elastic and radiative jet quenching in the strongly interacting QCD medium'

17:50 – 18:15 Naomi Oei (Uni. Frankfurt)

'J/Psi Formation and Dissociation within microscopic Langevin simulations'

18:15 – 18:40 Angelo Asta (Catania Uni.)

'Using a Bethe Salpeter approach to study hadronization'

18:40 – 19:05 Victor Ambruş (Uni. Timișoara)

'Kinetic model with arbitrary transport coefficients'

19:30 – *Dinner*

1 October, Sunday

Free discussions

Excursion

2 October, Monday

Chairman: Naomi Oei

9:30 – 10:20 Michael Buballa (TU Darmstadt)

'Lecture 1: Exploring the phase diagram of strong-interaction matter with QCD inspired models'

10:20 – 10:55 Magdalena Djordjevic (Uni. Belgrade)

'Constraining η/s through high- p_{\perp} tomography'

10:55 - 11:15 *Coffee break*

Chairman: Hendrik Roch

11:15 – 11:50 Marcus Bluhm (SUBATECH, Nantes)

'Strangeness fluctuations in heavy-ion collisions'

11:50 – 12:25 Hendrik van Hees (Uni. Frankfurt)

'Polarization of dileptons in heavy-ion collisions'

12:25 – 13:00 Masoud Shokri (Uni. Frankfurt)

'Sound of rigidly moving fluids: on linear waves in inhomogeneous backgrounds'

Lunch break
Free discussions

Chairman: Ilia Grishmanovskii

- 17:00 – 17:25 David Wagner (Uni. Frankfurt)
'Polarization, kinetic theory, and spin hydrodynamics'
- 17:25 – 17:50 Aphiwit Kittiratpattana (Uni. Frankfurt)
'Nuclei and hypernuclei production in pion induced reactions around threshold energies'
- 17:50 – 18:15 Julian Bernhardt (Uni. Giessen)
'From Imaginary to Real Chemical Potentials with DSEs and QCD Phase Transitions in the Light-Quark Chiral Limit'
- 18:15 – 18:40 Tim Neidig (Uni. Frankfurt)
'Open quantum systems with Kadanoff-Baym equations'
- 18:40 – 19:05 Renan Hirayama (Uni. Frankfurt)
'Anisotropic flow of dileptons in hadronic transport'

19:30 – Dinner

3 October, Tuesday

Chairman: Jiaxing Zhao

- 9:30 – 10:20 Michael Buballa (TU Darmstadt)
'Lecture 2: Exploring the phase diagram of strong-interaction matter with QCD inspired models'
- 10:20 – 10:55 Lucia Oliva (Uni. Catania)
'Spin Alignment of Vector Mesons in Heavy-Ion Collisions'
- 10:55 - 11:15 Coffee break

Chairman: Dusan Zigic

- 11:15 – 11:50 Iurii Karpenko (Uni. Prague)
'Simulating collectivity in dense baryon matter with multiple fluids'
- 11:50 – 12:15 Jakob Lohr (Uni. Frankfurt)
'Fluid dynamic simulations with HYDRA'
- 12:15 – 12:40 Gabriele Coci (Uni. Catania)
'Kinetic and potential mechanisms for deuteron production in HICs'
- 12:40 – 13:05 Theo Motta (Darmstadt Uni.)
'On Inhomogeneous Phases in QCD'

Lunch break
Free discussions

Chairman: Martin Rohrmoser

- 17:00 – 17:25 Marco Hofmann (Darmstadt Uni.)
'Color superconducting phases in dense matter'

- 17:25 – 17:50 Hendrik Roch (Uni. Frankfurt)
'Effects of jet fragmentation hadrons in the hadronic afterburner phase from small to large systems'
- 17:50 – 18:15 Clemens Werthmann (Wroclaw Uni.)
'System size dependence of pre-equilibrium and applicability of hydrodynamics in heavy-ion collisions'
- 18:15 – 18:40 Jan Rais (Uni. Frankfurt)
'Thermalization in the Caldeira-Leggett Model'
- 18:40 – 19:05 Omar Perez Figueroa (Uni. Giessen)
'BSM phenomenology from heterotic string orbifolds'
- 19:30 – Dinner

4 October, Wednesday

Chairman: Aphiwit Kittiratpattana

- 9:30 – 10:20 Michael Buballa (TU Darmstadt)
'Lecture 3: Exploring the phase diagram of strong-interaction matter with QCD inspired models'
- 10:20 – 10:45 Michał Marczenko (Uni. Wroclaw)
'Percolation and conformal limits in neutron stars'
- 10:45 - 11:15 Coffee break

Chairman: Gabriele Coci

- 11:15 – 11:40 Maria Lucia Sannataro (Uni. Catania)
'Heavy quark interaction in hot QCD matter: open charm and bottom dynamics in relativistic heavy-ion collisions'
- 11:40 – 12:05 Rupam Samanta (Uni. Krakow)
'Transverse momentum fluctuation in ultra-central Pb+Pb collision at the Large Hadron Collider'
- 12:05 – 12:30 Dusan Zigic (Uni. Belgrad)
'Exploring initial stages through ereDREENA'

Lunch break
Free discussions

19:30 – Dinner