

The 8th Conference on Chirality, Vorticity and Magnetic fields in Quantum Matter

PROGRAM



THE 8TH INTERNATIONAL CONFERENCE ON CHIRALITY, VORTICITY AND MAGNETIC FIELD IN QUANTUM MATTER

Useful information

You can connect to the internet through the Eduroam or UVT-Guest WiFi.

The conference venue is in the West University of Timișoara, Bulevardul Vasile Pârvan 4, at the Amphitheater A11 located on the 1st floor.



The university dormitory *Cămin Drept* is located 5 minutes away, entrance on Bd. Eroilor de la Tisa 9A, 300575, Timișoara, Romania.

Sponsors



For any question do not hesitate to contact the Local Organizing Committee: Victor Ambruș (co-chair), Matteo Buzzegoli, Maxim Chernodub (chair), Nicoleta Delia Ivanovici, Sergio Morales Tejera, Marius Ștef, Pracheta Singha or email us at chirality2024@e-uvt.ro.
Webpage: <https://indico.math.cnrs.fr/event/10773/>

PROGRAM

Monday, July 22, 2024

08:00 **Start of registration**

08:45 - 09:00 **Welcome**

09:00 - 10:30 **Plenary session**

Chair: Maxim Chernodub

09:00 **Sergei Voloshin**: Polarization in relativistic nuclear collisions: Experiment

09:45 **Andrea Palermo**: Theoretical review on spin polarization

10:30 - 11:00 **Coffee break**

11:00 - 13:00 **Polarization 1**

Chair: Sergei Voloshin

11:00 **Sergio Morales Tejera**: Vortical waves in a fluid with massless fermions

11:30 **Ion Cotaescu**: Pryce's spin and polarization of massive Dirac fermions

12:00 **Zhong-Hua Zhang** (online): Spin Alignment Induced by Curvature of Freezeout Hypersurface

13:00 - 14:30 **Lunch**

14:30 - 16:00 **Phase Diagram 1**

Chair: David Wagner

- 14:30 **Geraint Evans**: 3D Pion crystal from the chiral anomaly
- 15:00 **Pracheta Singha**: Inhibition of splitting of confining and chiral transition by rotation
- 15:30 **Qun Wang** (online): Quark spin correlations in relativistic heavy ion collisions
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16:00 - 16:30 **Coffee break**

16:30 - 17:30 **Magnetic field and Rotation 1**

Chair: Sushant Kumar Singh

- 16:30 **Shu Lin** (online): Chiral Kinetic Theory in Curved Space Revisited and Radiative Corrections
- 17:00 **Jinfeng Liao** (online): Baryon Stopping and Initial Angular Momentum in Heavy Ion Collisions
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17:30 - 18:30 **Flash talk and posters** (see the list online or in the book of abstracts)

Tuesday, July 23, 2024

09:00 - 10:30 **Plenary session**

Chair: Fuqiang Wang

- 9:00 **Alexandru Florin Dobrin**: Searches for Chiral Magnetic and Chiral Vortical Effects with ALICE
9:45 **Huan Huang**: A Novel Approach to Search for CME from STAR and the Future Prospect
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10:30 - 11:00 **Coffee break**

11:00 - 13:00 **Chiral Magnetic Effect 1**

Chair: Di-Lun Yang

- 11:00 **Sebastian Grieninger**: Spacetime dynamics of chiral magnetic currents in a hot non-Abelian plasma
11:30 **Irfan Siddique** (online): The effect of electric and chiral magnetic conductivities on azimuthally fluctuating electromagnetic fields and observables in isobar collisions
12:00 **Ruslan Abramchuk** (online): Negative magnetoresistance in Dirac Semimetals from Keldysh technique
12:30 **Jing-An Sun**: The weak magnetic effect on the direct photon production and hyperon local spin polarization
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13:00 - 14:30 **Lunch**

14:30 - 16:00 **Chiral Magnetic Effect 2**

Chair: Sebastian Griener

- 14:30 **Di-Lun Yang**: Chiral transport phenomena in core-collapse supernovae
- 15:00 **Zilin Yuan** (online): Chiral Magnetic and Vortical Effect in the Chiral Kinetic Approach using AMPT model
- 15:30 **Mikhail Zubkov**: Conductivities of CME, CSE and QHE as topological invariants
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16:00 - 16:30 **Coffee break**

16:30 - 18:00 **Hydrodynamics 1**

Chair: Andrea Palermo

- 16:30 **Masoud Shokri**: Latest updates on ideal-spin hydrodynamics
- 17:00 **Asaad Daher**: Relativistic Quantum-statistical formulation of spin hydrodynamics
- 17:30 **Matteo Buzzegoli**: Dynamical generation of canonical spin potential in hot QCD
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18:00 - 21:00 **Boat trip** (see below for more info)

Wednesday, July 24, 2024

09:00 - 10:30 **Phase Diagram 2**

Chair: Sergiu Busuioc

- 09:00 **Artem Roenko** (online): Mixed inhomogeneous phase in vortical gluon plasma from lattice simulation
- 09:30 **Zhibin Zhu** (online): Chiral symmetry breaking and restoration for an accelerated and rotated observer
- 10:00 **Aminul Islam Chowdhury**: QCD phase diagram in the $T - eB$ plane for pion masses beyond its physical value
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10:30 - 11:00 **Coffee break**

11:00 - 13:00 **Hyperons 1**

Chair: Andrea Palermo

- 11:00 **Tong Fu** (online): Measurement of global and local spin polarization of Λ and $\bar{\Lambda}$ in Au+Au collisions from the RHIC Beam Energy Scan-II
- 11:30 **Chenyan Li** (online): Hyperon polarization along the beam direction in pPb collision at CMS
- 12:00 **Dai-Neng Liu** (online): Global Hypertriton Polarization in Au+Au collisions at $\sqrt{s_{NN}} = 7.7 - 200$ GeV
- 12:30 **Xin-Nian Wang**: Lambda-(anti)Lambda Spin Correlation in Heavy-Ion Collisions

13:00 - 14:30 **Lunch**

14:30 - 16:00 **Plenary session**

Chair: Victor E. Ambrus

14:30 **Kenji Fukushima**: Phase diagram under rotation and magnetic field

15:15 **Dmitri Kharzeev** (online): CME-2024

16:00 - 16:30 **Coffee break**

16:30 - 18:00 **Polarization 2**

Chair: Radoslaw Ryblewski

16:30 **Francesco Becattini** (online): Higher order terms in fermion spin polarization

17:00 **Xin-Li Sheng**: Spin alignment of vector mesons in holographic model

17:30 **Ashutosh Dash** (online): Chiral Symmetry Breaking and Spin-One Condensates in Rotating Quark-Meson Systems

Thursday, July 25, 2024

09:00 - 10:30 **Plenary session**

Chair: Maxim Chernodub

9:00 **Eduardo Garnacho-Velasco**: Anomalous transport from lattice QCD

9:45 **Victor Braguta** (online): Lattice study of rotating QCD properties

10:30 - 11:00 **Coffee break**

11:00 - 13:00 **Magnetic field and Rotation 2**

Chair: Igor Shovkovy

11:00 **Kazuya Mameda**: Gauge invariance and thermodynamic stability of rotating magnetized systems

11:30 **Maik Selch**: Effective Lagrangian for the macroscopic motion of fermionic matter

12:00 **Jayanta Dey** (online): Electromagnetic field induction in quark-gluon plasma due to thermoelectric effects

12:30 **Jie Mei** (online): Magnetic catalysis and diamagnetism from pion fluctuations

13:00 - 14:30 **Lunch**

14:30 - 16:00 **Hydrodynamics 2**

Chair: Sergio Morales Tejera

- 14:30 **Matthias Kaminski** (online): Chirality and a strong magnetic field give rise to novel hydrodynamic transport near and far from equilibrium
- 15:00 **Luca Martinoia**: Relaxation terms for anomalous hydrodynamic transport in Weyl semimetals
- 15:30 **Rajeev Singh**: Relativistic stochastic advection diffusion equation using Metropolis
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16:00 - 16:30 **Coffee break**

16:30 - 18:00 **Magnetic field and Rotation 3**

Chair: Eduardo Garnacho-Velasco

- 16:30 **Igor Shovkovy**: Charge transport in strongly magnetized relativistic matter
- 17:00 **Ana Mizher** (online): Influence of magnetic field-induced anisotropic gluon pressure during pre-equilibrium
- 17:30 **Han-Sheng Li**: Search for the Chiral Magnetic Effect by Event Shape Engineering Differentially in Invariant Mass in Au+Au Collisions at $\sqrt{s_{NN}} = 200$ GeV from STAR
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19:00 - 23:00 **Conference dinner** (see below for more info)

Friday, July 26, 2024

09:45 - 10:30 **Plenary session**

Chair: Matteo Buzzegoli

09:45 **David Wagner**: Transport properties from quantum kinetic theory

10:30 - 11:00 **Coffee break**

11:00 - 13:00 **Polarization 3**

Chair: Xin-Li Sheng

11:00 **Radoslaw Ryblewski**: Chiral restoration driven spin polarization

11:30 **Giorgio Torrieri**: Spin 1 mesons as a probe for vorticity-polarization non-equilibrium

12:00 **Sushant Kumar Singh** (online): Effect of the QCD critical point on spin polarization of Λ hyperons

12:30 **Samapan Bhadury**: Longitudinal spin polarization in a thermal model with dissipative effects

13:00 - 14:30 **Lunch**

14:30 - 16:00 **Hydrodynamics 3**

Chair: Masoud Shokri

14:30 **Piotr Surówka**: Non-relativistic transport from frame-indifferent kinetic theory

15:00 **Shuai Wang** (online): Anomalous Hall instability in chiral magnetohydrodynamics

15:30 **Navid Abbasi** (online): Pinched singularity and long time tail

16:00 - 16:30 **Coffee break**

16:30 - 17:00 **Conclusions**

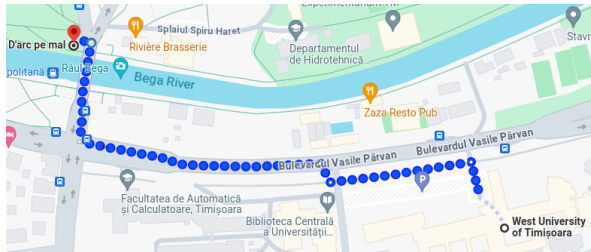
You can find the updated online timetable here:



<https://indico.math.cnrs.fr/event/10773/timetable/#20240722>

SOCIAL EVENTS AND DIRECTIONS

Boat trip: Tuesday, July 23, 18:00 - 21:00 We will enjoy a trip with the *Pelicanul* boat. Start/end point is *d'Arc pe Mal* (600 m, 9 min walk from the conference venue). Please be ready for boarding not later than 18:30.



Conference dinner: Thursday, July 25, 19:00 - 23:00
The dinner will take place at *Curtea berarilor: la fabrică* (1.6 km, 25 min walk from the conference venue), entrance from *Str. Ștefan cel Mare*.

