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

PROGRAM



PROGRAM AT A GLANCE

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		19:00-23:00 Conference dinner	19:00-23:00		_	Boattrip	18:00-21:00		
		Han Sheng LI: Search for the Chiral Magnetic Effect by Event Shape Engineering Differentially in Invariant Mass in Aut+Au Collisions at 200 GeV from STAR		As hutosh Dash*: Chiral symmetry breaking and spin one condensate in rotating quark meson system		Matteo Buzzegoli: Dynamical generation of canonical spin potential in hot QCD		Flash talks	17:30-18:30
=Online talk		Ana Mizher: Influence of magnetic field-induced anisotropic gluon pressure during pre-equilibrium		Xin-Li Sheng: Spin alignment of vector mesons in holographic model		Asaad Daher:Relativistic Quantum-statistical formulation of spin hydrodynamics		Jinfeng Liao*: Baryon Stopping and Initial Angular Momoment in Heavy Ion Collisions	
		Igor Shovkovy: Charge transport in strongly magnetized relativistic matter		Francesco Be cattini*: Higher order terms in fermion spin polarization		Masoud Shokri: Latest updates on ideal-spin hydrodynamics		Shu Lin*: Chiral Kinetic Theory in Curved Space Revisited and Radiative Corrections	
00 Conclusions	16:30-17:00	Magnetic field & Rotation 3	16:30-18:00	Polarization 2	16:30-18:00	Hydro 1	16:30-18:00	Magnetic field & Rotation 1	16:30-17:00
30 Coffee break 2	16:00-16:30	16:00-16:30 Coffee break 2	16:00-16:30	Coffee break 2	16:00-16:30	Coffee break 2	16:00-16:30	Coffee break 2	16:00-16:30
Navid Abbasi*: Pinched singularity and long time tail		Rajeev Shing: Relativistic stochastic advection diffusion equation using Metropolis				Mikhail Zubkov: Conductivities of CME, CSE and QHE as topological invariants			
Shual Wang*: Anomalous Hall instability in chiral magnetohydrod ynamics		Luca Martinola: Relaxation terms for anomalous hydrodynamic transport in Weyl semimetals	•	Dmtri Kharzeev*: Broader implications of chirality		ZIIn Yuan*: Chiral Magnetic and Vortical Effect in the Chiral Kinetic Approach using AMPT model		Pracheta Singha: Inhibition of splitting of confining and chiral transition by rotation	
Piotr Surowka: Non-relativistic transport from frame-indifferent kinetic theory		Matthias Kaminski*: Chirality and a strong magnetic field give rise to novel hydrodynamic transport near and far from equilibrium		Kenji Fukushima: Phase diagram under rotation and magnetic field		DiLun Yang: Chiral transport phenomena in core-collapse supernovae		Geraint Evans: 3D Pion crystal from the chiral anomaly	
00 Hydro 3	14:30-16:00	Hydro 2	14:30-16:00	Plenary	14:30-16:00	CME 2	14:30-16:00	Phase diagram 1	14:30-16:00
30 Lunch break	13:00-14:30	13:00-14:30 Lunch break	13:00-14:30	Lunch break	13:00-14:30	Lunch break	13:00-14:30	Lunch break	13:00-14:30
Samapan Bhadury: Longitudinal spin polarization in a thermal model with dissipative effects		Jie Mei*: Magnetic catalysis and diamagnetism from pion fluctuations		Xin-Nian Wang: Lambda-(anti)Lambda Spin Correlation in Heavy-Ion Collisions		Jing An Sun: The weak magnetic effect on the direct photon production and hyperon local spin polarization			
Sushant Kumar Singh*: Effect of the QCD critical point on spin polarization of A hyperons		Jayanta Dey*: Electromagnetic field induction in quark-gluon plasma due to thermoelectric effects		Dai-Neng Liu*: Global Hypertriton Polarization in Au+Au collisions at 7.7-200 GeV		Rus lan Abramchuk*: Negative magne to resistence in Dirac Semimetals from Keldysh technique		Zhong Hua Zhang*: Spin Alignment Induced by Curvature of Freezeout Hypersurface	
Giorgio Torrieri: Spin 1 mesons as a probe for vorticity-polarization non-equilibrium		Maik Solch:Effective Lagrangian for the macroscopic motion of fermionic matter		Chen Yan LF: Hyperon polarization along the beam direction in pPb collision at CMS		Irfan Siddique*: The effect of electric and chiral magnetic conductivities on azimuthally fluctuating electromagnetic fields and observables in isobar collisions		ion Cotaescu: Pryce's spin and polarization of massive Dirac fermions	
Radoslaw Rybiewski: Chiral restoration driven spin polarization		Kazuya Mameda: Gauge invariance and thermodynamic stability of rotating magnetized systems		Tong Fu*: Measurement of global and local spin polarization of A and A in Au+Au collisions from the RHIC Beam Energy Scan-II		Sebastian Grieninger: Spacetime dynamics of dhiral magnetic currents in a hot non-Abelian plasma		Sergio Morates Tejera: Vortical waves in a fluid with massless fermions	
00 Polarization 3	11:00-13:00	0 Magnetic field & Rotation 2	11:00-13:00	Hyperons 1	11:00-13:00	CME 1	11:00-13:00	Polarization 1	11:00-13:00
00 Coffee break 1	10:30-11:00	10:30-11:00 Coffee break 1	10:30-11:00	Coffee break 1	10:30-11:00	Coffee break 1	10:30-11:00	Coffee break 1	10:30-11:00
				Aminul Islam Chowdhury: QCD phase diagram in the T-eB plane for pion masses beyond its physical value					
David Wagner: Transport properties from quantum kinetic theory		Victor Braguta*: Lattice study of rotating QCD properties		Zhibin Zhu*: Chiral symmetry breaking and restoration for an accelerated and rotated observer		Huan Zhong Huang: A Novel Approach to Search for CME from STAR and the Future Prospect		Andrea Palermo: Theoretical review on spin polarization	
30 Plenary	09:45-10:30	Eduardo Garnacho Velas co: Anomalous transport from lattice QCD		Artem Roenko*: Mixed inhomogeneous phase in vortical gluon plasma from lattice simulation		Alex Dobrin: Searches for Chiral Magnetic and Chiral Vortical Effects with ALICE		Sergel Voloshin: Polarization in relativistic nuclear collisions: Experiment	
		Plenary	09:00-10:30 Plenary	Phase diagram 2	09:00-10:30	Plenary	09:00-10:30	Plenary	8
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riiday	İ	inii aday		recilional		iusousy		Start of Registration	08:00
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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 Timişoara, Bulevardul Vasile Pârvan 4, at the Amphitheater A11 located on the 1st floor.





The university dormitory $C\check{a}min\ Drept$ 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 Ambruş (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

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

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): Barvon Stopping and Ini-
- 17:00 **Jinfeng Liao** (online): Baryon Stopping and Initial Angular Momoment in Heavy Ion Collisions
- 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
- 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 magnetoresistence 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

14:30 - 16:00 Chiral Magnetic Effect 2

Chair: Sebastian Grieninger

- 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
- 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

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

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

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
- 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 preequilibrium
- 17:30 **Han-Sheng Li**: Search for the Chiral Magnetic Effect by Event Shape Engineering Differentially in Invariant Mass in Au+Au Collisions at $\sqrt{s_{NN}} = 200 \text{ GeV}$ from STAR

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

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*.

