

Transport & Spectroscopy of 2D Systems (TS2DS-2021)

An international workshop, August 2-6, 2021

MONDAY 2 August 2021 (times are MSK = UTC+3)

Pasadena (-10), New York (-7), Sao Paulo (-6), Yekaterinburg (+2), Novosibirsk (+4), Beijing (+5), Tokyo (+6)

15:50 *Welcome and opening remarks*

Session 2.A. Chair: Igor Burmistrov (Landau Institute, Chernogolovka, RU)

16:00 **Masayuki Hashisaka (NTT Basic Research Laboratories, Atsugi, JP)**

Andreev reflection of fractional quantum Hall quasiparticles

16:30 **Oleg Kibis (Novosibirsk State Technical University, Novosibirsk, RU)**

Optically induced bound electron states in two-dimensional systems

17:00 **Xiao-Xiao Zhang (University of Florida, Gainesville, US)**

Ultrafast spin dynamics in 2D antiferromagnet

17:30 *break and discussions*

Session 2.B. Chair: Jia Li (Brown University, US)

18:00 **Shuang Wu (Rutgers University, Piscataway, US)**

Chern insulators and topological flat-bands in magic-angle twisted bilayer graphene

18:30 **Pavel Alekseev (Ioffe Institute, St. Petersburg, RU)**

Phenomenological theory of ac magnetotransport in highly viscous two-dimensional electron fluid in GaAs quantum wells

19:00 **Gennady Gusev (Instituto de Fisica da Universidade de Sao Paulo, Sao Paulo, BR)**

Viscous magnetotransport in multilayer systems – double and triple wells

19:30 **Igor Burmistrov (Landau Institute, Chernogolovka, RU)**

Electromagnetic and gravitational responses of a disordered 2D electron gas: Can viscosity be extracted from nonlocal conductivity?

Organizers: I. Burmistrov (Landau Institute, Chernogolovka, RU), I. Dmitriev (U. Regensburg, Regensburg, DE), G. Gusev (U. Sao Paulo, Sao Paulo, BR), D. Maryenko (RIKEN CEMS, Wako, JP), S. Studenikin (NRC-CNRC, Ottawa, CA), M. Zudov (U. of Minnesota, Minneapolis, US)



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TUESDAY 3 August 2021 (times are MSK = UTC+3)

Pasadena (-10), New York (-7), Sao Paulo (-6), Yekaterinburg (+2), Novosibirsk (+4), Beijing (+5), Tokyo (+6)

Session 3.A. Chair: Inti Sodemann (MPI-PCS, Dresden, DE)

16:00 Dohun Kim (Seoul National University, Seoul, KR)

Coherent spectroscopy of quantum dot Wigner molecules in GaAs

16:30 Dmitry Polyakov (Karlsruhe Institute of Technology, Karlsruhe, DE)

Charge transport through fractional quantum Hall edges: Contacts, interactions, and equilibration

17:00 Sergey Dorozhkin (Institute of Solid State Physics RAS, Chernogolovka, RU)

Magnetic field induced quantum phase transitions in an imbalanced bilayer electron system

17:30 *break and discussions*

Session 3.B. Chair: Jie Shan (Cornell University, Ithaca, US)

18:00 Qiong Ma (Boston College, Chestnut Hill, US)

Electrical rectification in intrinsic 2D quantum materials

18:30 Joseph Falson (California Institute of Technology, Pasadena, US)

Phases of correlated electrons in ultra-clean oxides

19:00 Brian Skinner (Ohio State University, Columbus, US)

Mysteries in the transport data of 2D electrons near the zero-field Wigner crystal transition in ZnO

19:30 Alexei Chepelianskii (Laboratoire de Physique des Solides, Paris Saclay, FR)

Interaction effects in spectroscopic experiments with electrons on helium

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WEDNESDAY 4 August 2021 (times are MSK = UTC+3)

Pasadena (-10), New York (-7), Sao Paulo (-6), Yekaterinburg (+2), Novosibirsk (+4), Beijing (+5), Tokyo (+6)

Session 4.A. Chair: Michael Zudov (University of Minnesota, Minneapolis, US)

16:00 Dmitry Svintsov (Moscow Institute of Physics and Technology, Dolgoprudny, RU)

Terahertz rectification by tunnel junctions in graphene bilayer

16:30 Ivan Dmitriev (TerZ, University of Regensburg, Regensburg, DE)

Confirmation of strong helicity dependence of microwave induced resistance oscillations

17:00 Sergey Vitkalov (City College of New York, New York, US)

Temperature damping of MISD in magnetically entangled subbands

17:30 break

Session 4.B. Chair: Xiao-Xiao Zhang (University of Florida, Gainesville, US)

18:00 Jie Shan (Cornell University, Ithaca, US)

Correlated insulating states in 2D semiconductor moire lattices

18:30 Sergey Frolov (University of Pittsburgh, Pittsburgh, US)

Smashing nanowires into 2DEGs

19:00 Andrey Varlamov (SDIN-CNR, Rome, IT)

Genesis and fading away of the persistent currents in Corbino disc geometry

19:30 Dima Shepelyansky (Laboratoire de Physique Theorique CNRS, Toulouse, FR)

Coulomb electron pairing in a tight-binding model of La-based cuprate superconductors

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THURSDAY 5 August 2021 (times are MSK = UTC+3)

Pasadena (-10), New York (-7), Sao Paulo (-6), Yekaterinburg (+2), Novosibirsk (+4), Beijing (+5), Tokyo (+6)

Session 5.A. Chair: Denis Maryenko (RIKEN, Wako, JP)

16:00 Inti Sodemann (MPI for the Physics of Complex Systems, Dresden, DE)

Pseudoscalar $U(1)$ spin liquids in α - RuCl_3

16:30 Mikhail Glazov (Ioffe Institute, St. Petersburg, RU)

Valley Hall effect for two-dimensional electrons and excitons

17:00 Jia Li (Brown University, Providence, US)

Searching for non-abelian states in 2-component quantum Hall systems

17:30 *break*

Session 5.B. Chair: Sergey Frolov (University of Pittsburgh, Pittsburgh, US)

18:00 Jun Zhu (Penn State University, State College, US)

Recent progress on even-denominator fractional quantum Hall effect in bilayer graphene

18:30 Yuli Lyanda-Geller (Purdue University, West Lafayette, US)

Transport in helical Luttinger liquids in the fractional quantum Hall systems

19:00 Leonid Ponomarenko (Lancaster University, Lancaster, UK)

Ballistic transport in graphene/hBN superlattices

19:30 Michel Dyakonov (Université Montpellier, Montpellier, FR)

Gated 2D electron gas in magnetic field: nonlinear vs linear regimes

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FRIDAY 6 August 2021 (times are MSK = UTC+3)

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Session 6.A. Chair: Mikhail Glazov (Ioffe Institute, St. Petersburg, RU)

16:00 Chi Zhang (Institute of Semiconductors, CAS, Beijing, CN)

Vicinity transport study of a high mobility two-dimensional electron system

16:30 Ze Don Kvon (Institute of Semiconductor Physics, Novosibirsk, RU)

Anderson localization in two-dimensional electron-hole system

17:00 Grigori Minkov (Institute of Metal Physics, Ekaterinburg, RU)

The way from a two-dimensional topological insulator to a three-dimensional one in HgTe quantum wells: spectrum, transport, and beyond

17:30 break

Session 6.B. Chair: Joseph Falson (California Institute of Technology, Pasadena, US)

18:00 Fangyuan Yang (University of Santa Barbara, Santa Barbara, US)

Probing quantum Hall liquids and electron solids by direct measurement of chemical potential

18:30 Erik Henriksen (Washington University in St. Louis, St. Louis, US)

A 2D crystalline acceptor: modulation doping in atomically-thin heterostructures

19:00 Sergei Studenikin (NRC-CNRC, Ottawa, CA)

Hyperfine nuclei effects in p-GaAs structures

19:30 TBA

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