



International Workshop of the CRC1277:
Emergent Relativistic Effects in Condensed Matter

On-site (Vielberth-building, University of Regensburg) and virtually (online via Zoom)
September 22-24, 2021

– **Scientific Program** –



REGENSBURGER UNIVERSITÄTS
STIFTUNG
HANS VIELBERTH

Wednesday, September 22nd

- 09:30 – 10:30 registration, get together with coffee
- 10:30 – 10:40 **Rupert Huber** (Regensburg) **on-site**
Opening remarks
- Chair: Rupert Huber
- 10:40 – 11:10 **Ulrich Höfer** (Marburg) **on-site**
Ultrafast dynamics of Dirac currents and dark excitons
- 11:15 – 11:45 **Tobias Kampfrath** (Berlin) **online**
Probing ultrafast spin transport with terahertz electromagnetic pulses
- 11:50 – 12:05 **Carmen Roelcke** (Regensburg) **on-site**
Atom-scale near-field transients steering single-molecule dynamics
- 12:10 – 12:40 **Jacqueline Bloch** (Paris) **online**
Gap soliton in a 1D driven-dissipative topological lattice
- 12:45 – 14:30 lunch break
- 14:30 – 16:00 **poster session (on-site)**, discussion with coffee
- Chair: Klaus Richter
- 16:00 – 16:30 **Alex Kamenev** (Minneapolis) **on-site**
Coherence and decoherence in dark spaces of the Lindbladian evolution
- 16:35 – 17:05 **Janine Splettstößer** (Göteborg) **online**
Nonlinear thermoelectric effects: application to conductors with topological edge states
- 17:10 – 17:25 break
- Chair: Jonathan Eroms
- 17:25 – 17:55 **Roland Kawakami** (Columbus) **online**
Spin Orbit Torque in Epitaxial Kagome Magnets
- 18:00 – 18:30 **Matthew Gilbert** (Urbana Champaign) **on-site**
Evidence of Pseudogravitational Fields in Topological Antiferromagnets

Thursday, September 23rd

- 09:00 – 09:30
Chair: Isabella Gierz
Sivan Refaely-Abramson (Weizmann) **on-site**
Excited-state transport in transition metal dichalcogenides: structural effects form a many-body theoretical perspective
- 09:35 – 10:05
Mikhail Glazov (St. Petersburg) **online**
Anomalous, spin and valley Hall effects in two-dimensional crystals
- 10:10 – 10:25
Paulo Eduardo de Faria Junior (Regensburg) **on-site**
Tailoring the valley-Zeeman signature in van der Waals heterostructures
- 10:30 – 11:00
coffee break
- 11:00 – 11:30
Chair: Christoph Strunk
Alexander Brinkmann (Twente) **online**
Josephson junctions with topological interlayers
- 11:35 – 12:05
Julia Meyer (Grenoble) **online**
Conductance quantization in topological Josephson trijunctions
- 12:10 – 12:25
Nicola Paradiso (Regensburg) **on-site**
A superconducting Josephson junction diode
- 12:30 – 13:00
Carlo Beenakker (Leiden) **online**
Deconfinement of Majorana vortex modes produces a superconducting Landau level
- 13:05 – 14:30
lunch break
- 14:30 – 15:30
networking and discussion with coffee
- 15:30 – 16:00
Chair: Jaroslav Fabian
B. Andrei Bernevig (Princeton) **online**
New Phases of Matter in Twisted Bilayer Graphene
- 16:05 – 16:20
Erwin Mönch (Regensburg) **online**
Cyclotron resonance overtones and near-field magneto-absorption via terahertz Bernstein modes in graphene
- 16:25 – 16:55
Darius Torchinsky (Philadelphia) **online**
THz Emission Spectroscopy of Surface Photogalvanic Effects in the Chiral Weyl Semimetal RhSi
- 17:00 – 17:30
Tony Heinz (New York City) **online**
Probing excitons in momentum space
- 19:00
conference dinner
(Restaurant Leerer Beutel, Bertoldstraße 9, 93047 Regensburg)

Friday, September 24th

- 09:00 – 09:30
Chair: Christian Schüller
Atac Imamoglu (Zürich) **online**
Strongly correlated electrons and excitons in moire superlattices
- 09:35 – 09:50
Kaiqiang Lin (Regensburg) **on-site**
Narrowband high-lying excitons in mono- and bilayer WSe₂
- 09:55 – 10:25
Oliver Gröning (Dübendorf) **on-site**
Engineering of massive Dirac fermion electronic states in graphene nanoribbons
- 10:30 – 11:00
Lars Fritz (Utrecht)
Chiral symmetry breaking through spontaneous dimerization in kagome metals
- 11:05 – 11:30
coffee break
- 11:30 – 12:00
Chair: Dieter Weiss
Yoichi Ando (Cologne) **on-site**
Nonreciprocal Transport in Dirac Materials
- 12:05 – 12:35
Titus Neupert (Zürich) **on-site**
Correlated Kagome Metals
- 12:40 – 13:10
Alexey Kimel (Nijmegen) **on-site**
Optical Control of Spin-Orbit Interaction and Femtosecond Opto-Magnetism
- 13:15 – 13:20
Klaus Richter (Regensburg) **on-site**
Concluding remarks
- 13:20 – 15:00
lunch and farewell