

SPINS, WAVES, AND INTERACTIONS 2024

Greifswald, August 27 – 29



Program Overview:

Tuesday Aug 27 th		Wednesday Aug 28 th		Thursday Aug 29 th		
organized by:		8:45 – 9:00	Welcome and opening remarks			
	9:00 – 10:30 Session 1	Magnonics <i>Chair: Richard Schlitz</i> 9:00 Akashdeep Kamra (RTPU Kaiserslautern) 9:30 Rouven Dreyer (MLU Halle-Wittenberg) 10:00 Alexander Mook (JGU Mainz)		9:00 – 10:30 Session 4	Altermagnetism <i>Chair: Helena Reichlova</i> 9:30 Angela Wittmann (JGU Mainz) 10:00 Miina Leiviskä (FZU Prague) 10:30 Anna Birk Hellenes (JGU Mainz)	
		10:30 – 11:00	Coffee break	10:30 – 11:00	Coffee break	
		11:00 – 12:30 Session 2	Terahertz and Optics <i>Chair: Lukas Nadvornik</i> 11:00 Davide Bossini (Uni Konstanz) 11:30 Tom Seifert (FU Berlin) 12:00 Jon Gorchon (IJL Université de Lorraine)		11:00 – 12:30 Session 5	Spintronics in antiferromagnets <i>Chair: Markus Münzenberg</i> 11:00 Jakub Zelezny (FZU Prague) 11:30 Federico Caglieris (CNR-SPIN Genova) 12:00 Josef Kimak (Charles Uni Prague)
		12:30 – 14:00	Lunch		12:30 – 14:00	Lunch
		14:00 – 15:30 Session 3	Unconventional techniques <i>Chair: Sebastian T. B. Goennenwein</i> 14:00 Vilmos Kocsics (IFW Dresden) 14:30 Luise Siegl (Uni Konstanz) 15:00 Mateusz Goryca (Uni Warsaw)		14:00 – 15:30 Session 6	Neuromorphic computing <i>Chair: Michaela Lammel</i> 14:00 Andy Thomas (IFW Dresden) 14:30 Petr Nemeč (Charles Uni Prague) 15:00 Helmut Schultheiß (HZDR Dresden-Rossendorf)
	18:00	Arrival + Evening talk	15:30 – 18:00	Poster Session	15:30 – 16:00	Closing remarks
19:30	Dinner	19:00	Dinner			

sponsored by: Alfred Krupp Wissenschaftskolleg Greifswald
 in Trägerschaft der Stiftung Alfred Krupp Kolleg Greifswald

Tuesday, 27th August 2024

18:00 Public evening talk at the Krupp Kolleg (in German)

Dreh Dich mit dem Spin: Wie Spin hundert Jahre nach seiner Entdeckung heute unsere Technologie revolutioniert
 Angela Wittmann & Alexander Mook

19:00 Dinner (Brasserie Hermann, Anklamer Str. 108)



Wednesday, 28th August 2024

8:45 – 9:00 Welcome and opening remarks

9:00 – 10:30

Magnonics (Chair: Richard Schlitz – Uni Konstanz)

- 9:00 Akashdeep Kamra, RTPU Kaiserslautern, DE**
Uncovering quantum properties of magnons via fluctuations
- 9:30 Rouven Dreyer, MLU Halle, DE**
All-magnonic frequency comb generation in ferromagnetic microstructures
- 10:00 Alexander Mook, JGU Mainz, DE**
Crystal Thermal Hall Effect of Magnons in Insulating Altermagnets and Theory of Magnon-Magnon Many-Body Skew Scattering

10:30 – 11:00 Coffee break

11:00 – 12:30

Terahertz and Optics (Chair: Lukas Nadvornik – Charles Uni Prague)

- 11:00 Davide Bossini, Uni Konstanz, DE**
Dynamic renormalization of a spin Hamiltonian via high-order nonlinear magnonics
- 11:30 Tom Seifert, FU Berlin, DE**
Observing terahertz orbital-angular-momentum currents
- 12:00 Jon Gorchon, IJL Université d Lorraine, FR**
Revisiting magneto-optics and the role of spin currents

12:30 – 14:00 Lunch

14:00 – 15:30

Unconventional techniques (Chair: Sebastian T.B. Goennenwein – Uni Konstanz)

- 14:00 Vilmos Kosics, IFW Dresden, DE**
Spin transport in a multiferroic altermagnet
- 14:30 Luise Siegl, Uni Konstanz, DE**
Inductive magnon noise spectroscopy
- 15:00 Mateusz Goryca, Uni Warsaw, PL**
Magnetization Noise and Magnetic Monopoles in Artificial Spin Ice

15:30 – 18:00

Poster Session (presentations listed on last pages)

19:00 Dinner (Goldmarie, Fischstr. 11)



Thursday, 29th August 2024

9:00 – 10:30

Altermagnetism (Chair: Helena Reichlova – FZU Prague)

9:00 Angela Wittmann, JGU Mainz, DE

Chiral-induced unidirectional spin-to-charge conversion

9:30 Miina Leiviskä, FZU Prague, CZ

Anisotropy of the anomalous Hall effect in the altermagnet candidate Mn_5Si_3 films

10:00 Anna Birk Hellenes, JGU Mainz, DE

From altermagnets to p-wave magnets: electronic structure and spintronics applications

10:30 – 11:00 Coffee break

11:00 – 12:30

Spintronics in antiferromagnets (Chair: Markus Münzenberg – Uni Greifswald)

11:00 Jakub Zelezny, FZU Prague, CZ

Non-Relativistic Spin Currents and Torques in Antiferromagnets

11:30 Federico Cagliaris, CNR-SPIN Genova, IT

Anomalous Nernst effect in magnetic topological systems

12:00 Josef Kimak, Charles Uni Prague, CZ

Polarization-control of laser-induced torque in metallic non-collinear antiferromagnet Mn_3NiN

12:30 – 14:00 Lunch

14:00 – 15:30

Neuromorphic computing (Chair: Michaela Lammel – Uni Konstanz)

14:00 Andy Thomas, IFW Dresden, DE

Introduction to neuromorphic computing

14:30 Petr Nemeč, Charles Uni Prague, CZ

Picosecond-scale functionality in CuMnAs-based resistive analog antiferromagnetic memory device

14:30 Helmut Schultheiß, HZDR Dresden-Rossendorf, DE

Floquet magnons in a periodically-driven vortex

15:30 – 16:00 Closing remarks



Poster presentations:

1. **Ai, Xian-Yue** (Uni Konstanz)
Trajectory and repeatability of field induced magnetization reversal
2. **Benchtaber, Nassima** (Icmol Institute, Valencia University)
Transport properties study and magnetism in 2D heterostructures
3. **Chatzichrysafis, Dimos** (JGU Mainz)
Thermal Hall effect from magnon many-body skew scattering
4. **Firouzmandi, Reza** (IFW Dresden)
Heat transport in multiferroics
5. **Gonzalez Betancourt, Ruben Dario** (FZU Prague / IFW Dresden)
Magneto-thermal transport in altermagnetic MnTe
6. **Gramizadeh, Hamed** (Reykjavik University)
The impact of Spin-Orbit Interactions and Shubnikov-de Haas Oscillations on 2DEG system
7. **Grisk, Holger** (Uni Greifswald)
Investigation of exotic Terahertz Emitters
8. **Gueckstock, Oliver** (FU Berlin)
Magnon terahertz spin transport in metallic Gd|Pt thin-films
9. **Hellwig, Olav** (TU Chemnitz / HZDR)
Multilayer Metamaterials with Ferromagnetic Domains separated by Antiferromagnetic Domain Walls
10. **Herbst, Franz** (Uni Konstanz)
Combining Ultrafast Spin Noise Experiments and Faraday Microscopy
11. **Heyen, Hauke Lars** (Uni Greifswald)
Current driven skyrmion movement and their electrical detection in Ta/CoFeB/MgO
12. **Hoyer, Rhea** (JGU Mainz)
Spontaneous Crystal Thermal Hall Effect in Insulating Altermagnets
13. **Jäckel, Kevin** (Uni Greifswald)
Sampling the induced magnetic field of All-Optical Helicity Dependent Switching
14. **Kamalasanan, Anoop** (MLU Halle)
Transmission Line and Lumped element resonators for strong-coupling
15. **Kazemi, Masoumeh** (University of Iceland)
All optical control of skyrmion configuration in CrI₃ monolayer
16. **Keßler, Philipp** (JMU Würzburg)
Absence of magnetic order in RuO₂: insights from μ SR spectroscopy and neutron diffraction
17. **Körner, Chris** (MLU Halle)
Frequency multiplication by collective nanoscale spin-wave dynamics
18. **Kredl, Jana** (Uni Greifswald)
Application of 3D Lithography
19. **Müller, Christoph** (FZU Prague)
Magnetotransport in Altermagnetic Chromium Antimonide
20. **Oberbauer, Felix** (Uni Greifswald)
Laser-assisted Spintronics for Neuromorphic Computing
21. **Sahoo, Simran** (IIT Varanasi)
Ferromagnetic resonance properties of garnet thin films
22. **Sailler, Sebastian** (Uni Konstanz)
Competing magnetoresistive effects in metal thin films

23. **Scheffler, Daniel** (FZU Prague)
Aluminium substituted yttrium iron garnet thin films with reduced Curie temperature
24. **Schlitz, Richard** (Uni Konstanz)
Spin Torque Driven Paramagnetic Resonance
25. **Skobjin, Gregor** (Uni Konstanz)
Detecting slow magnetization relaxation via magnetotransport measurements
26. **Tripathi, Nitipriya** (IIT Varanasi)
Temperature- dependent magnetization dynamics in a non-collinear Mn_3Pt and Mn_3PtN anti-ferromagnetic thin films
27. **Veyrat, Louis** (LNCMI / CNRS Toulouse)
A stencil-lithography station all-in-UHV for the nanofabrication of air-sensitive thin-films
28. **Weiss, Marvin** (Uni Konstanz)
Femtosecond noise correlation spectroscopy for the investigation of the ultrafast magnon noise dynamics
29. **Wiechert, Volker** (Uni Konstanz)
Spatiotemporal magnon propagation in ultrathin iron garnets
30. **Xiong, Zeling** (HZDR Dresden)
Spin-Wave Vortex Interaction in Non-equilibrium States