

# **X-tronics with Emerging Magnetic Materials**

**825. WE-Heraeus-Seminar**

**06 Jan - 09 Jan 2025**

**at the Physikzentrum Bad Honnef, Germany**

**WILHELM UND ELSE  
HERAEUS-STIFTUNG**



# Program

**Monday, January 6, 2025**

16:00 – 20:00	Registration	
18:00	<i>BUFFET SUPPER and informal get-together</i>	
19:15 – 19:30	Aisha Aqeel Dongwook Go	<b>Welcome and opening remarks</b>
19:30 – 19:45	Video contribution	<b>About the Wilhelm and Else Heraeus Foundation</b>
19:45 – 20:30	Christian Back	<b>Tuning magnetic properties by spin currents</b>
20:30 – 20:45	Lucas Caretta CT	<b>Stabilizing Multiferroic Order and Topology in Ultrathin BiFeO<sub>3</sub></b>

# Program

**Tuesday, January 7, 2025**

08:00 – 09:00	<i>BREAKFAST</i>	
09:00 – 09:45	Felix Büttner	<b>Topological magnetic switching in 2D and 3D</b>
09:45 – 10:30	Karin Everschor-Sitte	<b>"2D + 1D = 3D", sometimes!?</b>
10:30 – 11:00	<i>COFFEE BREAK</i>	
11:00 – 11:45	Sopheak Sorn	<b>Topological dipoles of quantum skyrmions</b>
11:45 – 12:30	Alexander Mook	<b>Interacting Magnons in Ferromagnets, Antiferromagnets and Altermagnets</b>
12:30 – 14:00	<i>LUNCH</i>	
14:00 – 14:45	Mathias Weiler	<b>Coupling ferromagnetic and antiferromagnetic spin dynamics in hybrid bilayer systems</b>
14:45 – 15:30	Libor Smejkal	<b>Altermagnetism and spin group theory</b>

# Program

**Tuesday, January 7, 2025**

15:30 – 16:00    *COFFEE BREAK*

16:00 – 16:45    Aurélien Manchon    **Theory of orbital diffusion, pumping, and detection**

16:45 – 17:30    Kyung-Whan Kim    **Exploring Orbital Dynamics Distinct From Spin Dynamics**

17:30 – 18:15    Tom S. Seifert    **Driving and probing terahertz spin and orbital currents**

18:15 – 19:30    *HERAEUS DINNER at the Physikzentrum*  
*(cold and warm buffet, with complimentary drinks)*

19:30    **Posters**

# Program

Wednesday, January 8, 2025

08:00 – 09:00	<i>BREAKFAST</i>	
09:00 – 09:45	Tatjana G. Rappoport	<b>Disorder-Driven Effects in Orbital Transport: From Bulk OHE to Mesoscopic Devices</b>
09:45 – 10:30	Börge Göbel	<b>Orbital Hall effect accompanying quantum and topological Hall effects</b>
10:30 – 11:00	<i>COFFEE BREAK</i>	
11:00 – 11:45	Yuriy Mokrousov	<b>Unified topological viewpoint at spin textures</b>
11:45 – 12:30	NN	
12:30 – 14:00	<i>LUNCH</i>	
14:00 – 15:30	<b>Posters</b>	
15:30 – 16:00	<i>COFFEE BREAK</i>	
16:00 – 16:45	Philipp Pirro	<b>Auto-oscillating magnons leading to magnetic switching- dynamic stability by spin torques</b>
16:45 – 17:30	Dirk Grundler	<b>Non-reciprocal magnons in natural and artificial chiral magnets</b>

# Program

Wednesday, January 8, 2025

17:30 – 17:45	Florian Dirnberger CT	<b>Excitons, magnons &amp; photons in 2D magnetic insulators</b>
17:45 – 18:00	Hye-Won Ko CT	<b>Magnetic octupole Hall effect in d- wave altermagnets</b>
18:00 – 19:30	<i>DINNER</i>	
19:30 – 19:45	<b>Poster Awards</b>	
19:45 – 20:00	Jing Wu CT	<b>Manipulation of Spin Ordering in 2D Magnets</b>
20:00 – 20:15	Robin R. Neumann CT	<b>Electrical Activity of Topological Magnons</b>

# Program

Thursday, January 9, 2025

08:00 – 09:00	<i>BREAKFAST</i>	
09:00 – 09:45	Mario Cuoco	<b>Spin-orbital chiral metal</b>
09:45 – 10:30	Katharina J. Franke	<b>Single atoms and magnetic nanostructures on superconductors: Hybridization of Yu-Shiba-Rusinov states and Josephson-diode effect</b>
10:30 – 11:00	<i>COFFEE BREAK</i>	
11:00 – 11:45	Matthias Althammer	<b>All-electrical angular momentum transport experiments in antiferromagnetic insulators and isolated ferromagnetic metals</b>
11:45 – 12:30	Angela Wittmann	<b>Chiral-induced unidirectional spin-to-charge conversion</b>
12:30 – 12:45	Scientific organizers	<b>Concluding remarks</b>
12:45 – 14:00	<i>LUNCH</i>	

**End of the seminar and departure**