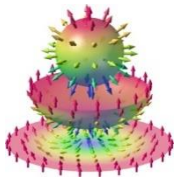
Young Researchers' Retreat

21 – 25 April 2024, Dietmannsried, Hotel "das flax"

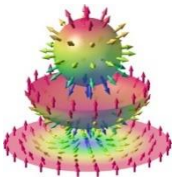


SPP2137 Skyrmionics
Topological Spin Phenomena in Real-Space for Applications

Program overview

Time	Sunday 21/04	Monday 22/04	Tuesday 23/04	Wednesday 24/04	Thursday 25/04
		Breakfast	*Breakfast*	*Breakfast*	*Breakfast*
09:00		**Invited talk 1 István Kézsmárki**	**Invited talk 3 Ulrich Nowak**	Excursion to Kempten	Semiplenary talk 1
09:45					Semiplenary talk 2
10:00		Contributed talk 1	Contributed talk 7		
10:30		*Coffee*	*Coffee*		*Coffee*
11:00		Contributed talk 2	Contributed talk 8		Contributed talk 13
11:30		Contributed talk 3	Contributed talk 9		Closing Remarks
12:00		*Lunch*	*Lunch*		*Lunch*
14:00		**Invited talk 2 Christina Psaroudaki**	**Invited talk 4 Nicolas Reyren**	**Invited talk 6 Yolita Eggeler**	Departure
15:00		Contributed talk 4	transition to industry	Contributed talk 10	
15:30		*Coffee*	*Coffee*	*Coffee*	
16:00		Contributed talk 5	**Invited talk 5 Ankit Sharma** attocube systems AG	Contributed talk 11	
16:30		Contributed talk 6		Contributed talk 12	
17:00	*Arrival & Check in*	*Break*	*Break*	*Break*	
18:00	*Dinner*	*Dinner*	*Dinner*	*Dinner*	
	Poster night	Poster night	Poster night	Poster night	

Program



Sunday 21/04

Until 18:00	**Arrival at the hotel "das flax" and check in.** *das flax allgäu* *Schlosserstr. 4* *87463 Dietmannsried*
18:00	*Dinner at the hotel*
Until 23:59	**Poster night.** Check out the posters, discuss, network, go to the bar.

Monday 22/04

Until 09:00	*Breakfast at the hotel*
09:00 – 10:00	**István Kézsmárki** University of Augsburg *t.b.a.*
10:00 – 10:30	**Sam Holt** Max Planck Institute for Structure and Dynamics of Matter (MPSD) *Discretisation Anisotropy in Micromagnetic Simulations*
10:30 – 11:00	*Coffee*
11:00 – 11:30	**Tamer Karaman** University of Augsburg *Real-space probing chirality and topology of rare-earth transition metal amorphous ferrimagnets*
11:30 – 12:00	**Alla Bezvershenko** University of Cologne *Directed movement of skyrmion lines in oscillating magnetic fields*
12:00 – 14:00	*Lunch at the hotel*
14:00 – 15:00	**Christina Psaroudaki** Laboratoire de Physique de l'Ecole Normale Supérieure (LPENS) *Quantum Functionalities of Magnetic Skyrmions*
15:00 – 15:30	**Sopheak Sorn** Karlsruhe Institute of Technology *Conservation laws and dynamics of topological spin textures*
15:30 – 16:00	*Coffee*
16:00 – 16:30	**Andrii Savchenko** Forschungszentrum Jülich *Magnetic Toron in FeGe nanocylinder*

	16:30 – 17:00	**Nihad Abuawwad** Forschungszentrum Jülich *Electrical engineering of topological magnetism in two-dimensional heterobilayers*
	17:00 – 18:00	*Break*
	18:00	*Dinner at the hotel*
	Until 23:59	**Poster night.** Check out the posters, discuss, network, go to the bar.

Tuesday 23/04

	Until 09:00	*Breakfast at the hotel*
	09:00 – 10:00	**Ulrich Nowak** University of Konstanz *Stochastic dynamics of topological spin textures*
	10:00 – 10:30	**Selcuk Sözeri** Forschungszentrum Jülich *Ab-initio exploration of complex magnetism of frustrated Mn layer on Ag(111) surface*
	10:30 – 11:00	*Coffee*
	11:00 – 11:30	**Frederik Austrup** University of Hamburg *The dynamics of skyrmion shrinking*
	11:30 – 12:00	**Thomas Winkler** JGU Mainz *Skyrmion detection with U-Net*
	12:00 – 14:00	*Lunch at the hotel*
	14:00 – 15:00	**Nicolas Reyren** Laboratoire Albert Fert, CNRS, Thales, Université Paris-Sud *t.b.a.*
	15:00 – 15:30	**Discussion: Academia vs. Industry** with Nicolas Reyren and Ankit Sharma
	15:30 – 16:00	*Coffee*
	16:00 – 17:00	**Ankit Sharma** Attocube Systems AG *t.b.a.*
	17:00 – 18:00	*Break*
	18:00	*Dinner at the hotel*
	Until 23:59	**Poster night.** Check out the posters, discuss, network, go to the bar.

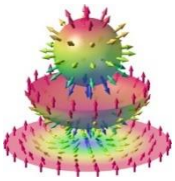
Wednesday 24/04

Until 09:00	*Breakfast at the hotel*
09:00 – 13:30	**Group excursion to Kempten** *Let's explore the beautiful city of Kempten which is near our venue.* *Lunch-boxes will be prepared by the hotel.*
14:00 – 15:00	**Yolita Eggeler** Karlsruhe Institute of Technology (KIT) *t.b.a.*
15:00 – 15:30	**Sebastian Schneider** TU Dresden *In-situ correlation of the Hall effect with the occcurence of topological magnetic phases*
15:30 – 16:00	*Coffee*
16:00 – 16:30	**Denis Mettus** TUM / MLZ *Skyrmion lattice order with moderate magnetocrystalline anisotropies in* $Fe_{1-x}Co_xSi$
16:30 – 17:00	**Timo Schmidt** Universität Augsburg *Reversible Topological Transformations of Skymions and Trivial Bubbles*
17:00 – 18:00	*Break*
18:00	*Dinner at the hotel*
Until 23:59	**Poster night.** Check out the posters, discuss, network, go to the bar.

Thursday 25/04

Until 09:00	*Breakfast at the hotel*
09:00 – 09:45	**Kai Litzius** University of Augsburg *Controlling the stability, Nucleation and Dynamics of Skyrmions in van der Waals magnets*
09:45 – 10:30	**Valentin Ahrens** Technical University of Munich *How to Manipulate Skyrmions by Focused Ion Beam Irradiation*
10:30 – 11:00	*Coffee*
11:00 – 11:30	**Krishnanjana Puzhekadavil Joy** University of Augsburg *Current induced nucleation of spin textures in aperiodic multilayers*
11:30 – 12:00	**Closing Remarks** *Final comments on organizational matters, feedback, farewell*
12:00	*Lunch at the hotel*
	Departure

Posters



Posters will be on display for the entire duration of the retreat. All participants are asked to present a poster, whether they give a talk or not. Posters can be used to summarize the contents of the talk or to present another topic. The authors decide how to use this additional, long-term exposed canvas.

Nihad Abuawwad
Forschungszentrum Jülich
Electrical engineering of topological magnetism in two-dimensional heterobilayers

Valentin Ahrens
Technical University of Munich
How to Manipulate Skyrmions by Focused Ion Beam Irradiation

Frederik Austrup
Universität Hamburg
The dynamics of Skyrmion shrinking

Bjarne Beyer
Universität zu Kiel
Multi-Q state emerging from frustrated interlayer exchange interaction

Tim Drevelow
University of Kiel
Complex non-collinear spin structure of a Mn double layer on Ag(111)

Hauke Lars Heyen
University of Greifswald
Current driven skyrmion movement and their electrical detection in Ta/CoFeB/MgO

Sam Holt
Max Planck Institute for Structure and Dynamics of Matter (MPSD)
Discretisation Anisotropy in Micromagnetic Simulations

Tamer Karaman
University of Augsburg
Exploring Chirality and Topology in Ferrimagnetic Multilayer Systems

Leo Kollwitz
University of Kiel
Monte Carlo algorithm enhanced by eigenexcitations of atomistic spin Hamiltonian

Kai Litzius
University of Augsburg
Dynamic Investigation of Magnetic Skyrmions in the 2D van der Waals Magnet Fe_3GeTe_2

Jan Masell
Karlsruhe Institute of Technology (KIT) & RIKEN
Antiskyrmions are cooler than skyrmions

Sina Mehboodi
TUM
Study of the chiral magnet Cu_2OSeO_3 using resonant elastic X-ray scattering

Denis Mettus
TUM / MLZ
Skyrm*ion lattice order with moderate magnetocrystalline anisotropies in $Fe_{1-x}Co_xSi$*

Krishnanjana Puzhekadavil Joy
Universität Augsburg
Current induced nucleation of spin textures in aperiodic multilayers

Andrii Savchenko
Forschungszentrum Jülich
Skyrmion bags in thin films of FeGe

Timo Schmidt
Universität Augsburg
Reversible Topological Transformations of Skymions and Trivial Bubbles

Sebastian Schneider
TU Dresden
Investigations of magnetic spin-textures in the antiskyrmion compound $Mn_{1.4}PtSn$ by complementary microscopy and scattering experiments using LTEM and REXS

Philipp Schwenke
RPTU Kaiserslautern-Landau
Towards cavity-based excitation of magnetization dynamics in a skyrmion host material

Sopheak Sorn
Karlsruhe Institute of Technology
Conservation laws and dynamics of topological spin textures

Selcuk Sözeri
Forschungszentrum Jülich
Ab-initio exploration of complex magnetism of frustrated Mn layer on Ag(111) surface

Thomas Winkler
JGU Mainz
Machine-learning based spin structure detection

Kauser Zulfiqar
Max Planck Institute for Structure and Dynamics of Matter (MPSD)
Spin-wave dispersion in a skyrmion chain

Organizers

The organizing committee. If you find any mistakes or have questions, contact us:

Aisha Aqeel, University of Augsburg (link)
Venkata Krishna "V.K." Bharadwaj, JGU Mainz (link)
Mona Bhukta, JGU Mainz (link)
Jan Masell, Karlsruhe Institute of Technology (KIT) & RIKEN (link)
Alessandro Pignedoli, University of Duisburg-Essen (link)