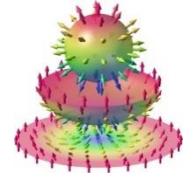


Young Researchers' Retreat

21 – 25 April 2024, Dietmannsried, Hotel “das flax”

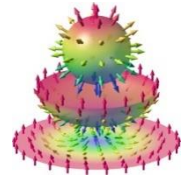


SPP2137 Skyrmionics
Topological Spin Phenomena in Real-Space for Applications

Program overview

Time	Sunday 21/04	Monday 22/04	Tuesday 23/04	Wednesday 24/04	Thursday 25/04
		<i>Breakfast</i>	<i>Breakfast</i>	<i>Breakfast</i>	<i>Breakfast</i>
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		<i>Coffee</i>	<i>Coffee</i>		<i>Coffee</i>
11:00		Contributed talk 2	t.b.a.		Contributed talk 13
11:30		Contributed talk 3	Contributed talk 9		Closing Remarks
12:00		<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>
13:00				<i>Lunch</i>	
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		<i>Coffee</i>	<i>Coffee</i>	<i>Coffee</i>	
16:00		Contributed talk 5	Invited talk 5 Ankit Sharma	Contributed talk 11	
16:30		Contributed talk 6	attocube systems AG	Contributed talk 12	
17:00	<i>Arrival & Check in</i>	<i>Break</i>	<i>Break</i>	<i>Break</i>	
18:00	<i>Dinner (20:15!)</i>	<i>Dinner</i>	<i>Dinner</i>	<i>Dinner</i>	
	Poster night	Poster night	Poster night	Poster night	

Program



Sunday 21/04

Until 18:00	Arrival at the hotel “das flax” and check in. <i>das flax allgäu</i> <i>Schlosserstr. 4</i> <i>87463 Dietmannsried</i>
18:00	<i>Dinner at the hotel (3-course buffet)</i>
Until 23:59	Poster night. Check out the posters, discuss, network, go to the bar.

Monday 22/04

Until 09:00	<i>Breakfast at the hotel</i>
09:00 – 10:00	István Kézsmárki University of Augsburg <i>Role of anisotropy in shaping skyrmions</i>
10:00 – 10:30	Sam Holt Max Planck Institute for Structure and Dynamics of Matter (MPSD) <i>Discretisation Anisotropy in Micromagnetic Simulations</i>
10:30 – 11:00	<i>Coffee</i>
11:00 – 11:30	Tamer Karaman University of Augsburg <i>Real-space probing chirality and topology of rare-earth transition metal amorphous ferrimagnets</i>
11:30 – 12:00	Alla Bezvershenko University of Cologne <i>Directed movement of skyrmion lines in oscillating magnetic fields</i>
12:00 – 14:00	<i>Lunch at the hotel (2-course buffet)</i>
14:00 – 15:00	Christina Psaroudaki Laboratoire de Physique de l’Ecole Normale Supérieure (LPENS) <i>Quantum Functionalities of Magnetic Skyrmions</i>
15:00 – 15:30	Sopheak Sorn Karlsruhe Institute of Technology <i>Conservation laws and dynamics of topological spin textures</i>
15:30 – 16:00	<i>Coffee</i>
16:00 – 16:30	Andrii Savchenko Forschungszentrum Jülich <i>Magnetic Toron in FeGe nanocylinder</i>

16:30 – 17:00	Nihad Abuawwad Forschungszentrum Jülich <i>Electrical engineering of topological magnetism in two-dimensional heterobilayers</i>
17:00 – 18:00	<i>Break</i>
18:00	<i>Dinner at the hotel (3-course buffet)</i>
Until 23:59	Poster night. Check out the posters, discuss, network, go to the bar.

Tuesday 23/04

Until 09:00	<i>Breakfast at the hotel</i>
09:00 – 10:00	Ulrich Nowak University of Konstanz <i>Stochastic dynamics of topological spin textures</i>
10:00 – 10:30	Selcuk Sözeri Forschungszentrum Jülich <i>Ab-initio exploration of complex magnetism of frustrated Mn layer on Ag(111) surface</i>
10:30 – 11:00	<i>Coffee</i>
11:00 – 11:30	t.b.a. t.b.a. t.b.a.
11:30 – 12:00	Thomas Winkler JGU Mainz <i>Skyrmion detection with U-Net</i>
12:00 – 14:00	<i>Lunch at the hotel (2-course buffet)</i>
14:00 – 15:00	Nicolas Reyren Laboratoire Albert Fert, CNRS, Thales, Université Paris-Sud <i>Metallic multilayers hosting skyrmions and cocoons</i>
15:00 – 15:30	Discussion: Academia vs. Industry with Nicolas Reyren and Ankit Sharma
15:30 – 16:00	<i>Coffee</i>
16:00 – 17:00	Ankit Sharma Attocube Systems AG t.b.a.
17:00 – 18:00	<i>Break</i>
18:00	<i>Dinner at the hotel (3-course buffet)</i>
Until 23:59	Poster night. Check out the posters, discuss, network, go to the bar.

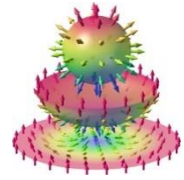
Wednesday 24/04

Until 09:00	<i>Breakfast at the hotel</i>
09:00 – 13:00	Group excursion to Kempten <i>Let's explore the beautiful city of Kempten which is near our venue. Lunch-boxes will be prepared by the hotel.</i>
13:00 – 14:00	<i>Lunch at the hotel (2-course buffet)</i>
14:00 – 15:00	Yolita Eggeler Karlsruhe Institute of Technology (KIT) <i>Electron microscopy or materials with magnetic properties</i>
15:00 – 15:30	Sebastian Schneider TU Dresden <i>In-situ correlation of the Hall effect with the occurrence of topological magnetic phases</i>
15:30 – 16:00	<i>Coffee</i>
16:00 – 16:30	Denis Mettus TUM / MLZ <i>Skyrmion lattice order with moderate magnetocrystalline anisotropies in $Fe_{1-x}Co_xSi$</i>
16:30 – 17:00	Timo Schmidt Universität Augsburg <i>Reversible Topological Transformations of Skyrmions and Trivial Bubbles</i>
17:00 – 18:00	<i>Break</i>
18:00	<i>Dinner at the hotel (3-course buffet)</i>
Until 23:59	Poster night. Check out the posters, discuss, network, go to the bar.

Thursday 25/04

Until 09:00	<i>Breakfast at the hotel</i>
09:00 – 09:45	Kai Litzius University of Augsburg <i>Controlling the stability, Nucleation and Dynamics of Skyrmions in van der Waals magnets</i>
09:45 – 10:30	Valentin Ahrens Technical University of Munich <i>How to Manipulate Skyrmions by Focused Ion Beam Irradiation</i>
10:30 – 11:00	<i>Coffee</i>
11:00 – 11:30	Krishnanjana Puzhekadavil Joy University of Augsburg <i>Current induced nucleation of spin textures in aperiodic multilayers</i>
11:30 – 12:00	Closing Remarks <i>Final comments on organizational matters, feedback, farewell</i>
12:00	<i>Lunch at the hotel (2-course buffet)</i>
	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

Aisha Aqeel

University of Augsburg

Spin Dynamics in Complex Magnetic Materials

Bjarne Beyer

Christian Albrechts 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

Skyrmion 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 Skyrmions 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](#))