

Program

Sunday, 1 December 2019

14:00 – 20:00 Registration

15:00 – 16:00 *Informal reception (coffee and cake)*

16:00 - 16:10 Scientific organizers **Opening and welcome**

Tutorials

16:10 – 17:10 Markus Garst **Topological magnetism with a twist**

17:10 – 18:10 Christopher Marrows **Skyrmions in chiral magnetic multilayers**

from 18:30 *BUFFET SUPPER / Informal get together*

Monday, 2 December 2019

08:00 *BREAKFAST*

Structures

09:00 – 09:40 Istvan Kézsmárki **Effect of geometrical confinement on Néel-type magnetic modulations**

09:40 – 10:00 Thomas Hicken **Muon-spin relaxation measurements on the substituted Néel-skyrmion system $\text{GaV}_4\text{S}_{8-y}\text{Se}_y$**

10:00 – 10:20 Rana Saha **Magnetic anti-skyrmions in tetragonal inverse Heuslers**

10:20 – 10:40 Aisha Aqeel **New skyrmion resonance modes in a chiral magnetic insulator**

10:40 – 11:10 *COFFEE BREAK*

Program

Monday, 2 December 2019

Theory

- 11:10 – 11:50 Yuriy Mokrousov **Skyrmions, quantum Hall effect, and non-commutative geometry**
- 11:50 – 12:30 Hans Fangohr **Towards reproducible micromagnetics with Ubermag**
- 12:30 **Conference photo** (in the foyer of the lecture hall)
- 12:40 *LUNCH*

Thin films & surfaces

- 14:00 – 14:40 Kirsten von Bergmann **Nanometer-scale magnetic skyrmions studied with STM**
- 14:40 – 15:00 Lena Wysocki **Tailoring anomalous Hall resistivity by interfacial modifications in asymmetric SrRuO₃ - based heterostructures**
- 15:00 – 15:40 Katharina Zeissler **Nucleation, motion and detection of skyrmions**
- 15:40 – 16:00 Stefan Jorda **About the Wilhelm and Else Heraeus Foundation**
- 16:00 – 16:30 *COFFEE BREAK*
- 16:30 – 18:30 Poster session
- 19:30 *DINNER*

Program

Tuesday, 3 December 2019

08:00 *BREAKFAST*

Spin excitations

- 09:00 – 09:40 Shinichiro Seki Coherent signal transfer along skyrmion strings
- 09:40 – 10:00 Rolf Versteeg Coupled dynamics of long-range and cluster-internal spin order in the cluster Mott insulator Cu_2OSeO_3
- 10:00 – 10:20 Nikolai Kiselev Static and dynamic properties of heavy skyrmions
- 10:20 – 10:40 Dongwook Go Current-induced orbital angular momentum and orbital torque for spin-orbitronics

10:40 – 11:10 *COFFEE BREAK*

Applications & devices

- 11:10 – 11:50 Rolf Allenspach Chiral effects in nanomagnetic devices
- 11:50 – 12:30 Karin Everschor-Sitte Skyrmions for unconventional computing

12:30 *LUNCH*

Other systems

- 14:00 – 14:40 Benoit Douçot Skyrmion crystals in quantum Hall ferromagnets
- 14:40 – 15:20 Ivan Smalyukh Three-dimensional crystals of topological knot solitons
- 15:20 – 15:40 Filipp Rybakov Hopfions and skyrmions in magnets with competing interactions
- 15:40 – 16:00 Charles Kind Existence and stability of skyrmion bags in thin magnetic films
- 16:00 – 16:30 *COFFEE BREAK*

Program

Tuesday, 3 December 2019

Nucleation & stability

16:30 – 17:10	Murray Wilson	Measuring the formation energy barrier of skyrmions in zinc substituted Cu_2OSeO_3
17:10 – 17:30	Valery Uzdin	Stability and lifetimes of skyrmions at different spatial scales
17:30 – 17:50	Denis Mettus	Nucleation mechanism of the low-temperature skyrmion state in Cu_2OSeO_3
17:50 – 18:10	Gerald Malsch	Measurement of the low-temperature skyrmion phase in Cu_2OSeO_3 by Magnetic-Force-Microscopy
18:30	<i>DINNER</i>	

Program

Wednesday, 4 December 2019

08:00 *BREAKFAST*

Emergent electrodynamics & stability

09:00 – 09:40 Thorsten Hesjedal X-ray studies of ordered Skyrmions -
Microscopic properties, 3D structure &
dynamics

09:40 – 10:00 Olena Gomonyay Antiferromagnetic textures: Eigen
modes and spin current induced
dynamics

10:00 – 10:40 Alfonso Chacon Roldan Relaxation of non-equilibrium
skyrmions in $\text{Fe}_{0.5}\text{Co}_{0.5}\text{Si}$

10:40 – 11:10 *COFFEE BREAK*

Nuclear & particle physics

11:10 – 11:50 Nicholas Manton Skyrme's original skyrmions

11:50 – 12:30 Ian Aitchison Tony Skyrme and the origins of
skyrmions

12:30 *LUNCH*

from 13:30 Excursion (total footpath approx. 3 km)

Guided tour through the "Bundeskanzler-Adenauer-Haus"
in Rhöndorf (district of Bad Honnef)

Wine tasting and *HERAEUS DINNER*
at the winery "Broel" in Rhöndorf

Program

Thursday, 5 December 2019

08:00 *BREAKFAST*

Imaging

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|---------------|---------------------|--|
| 09:00 – 09:20 | James Loudon | Quantitative transmission electron microscopy of skyrmions |
| 09:20 – 09:40 | Andras Kovács | Quantitative magnetic field characterisation of Bloch and Néel type skyrmions using off-axis electron holography |
| 09:40 – 10:00 | Gerrit van der Laan | Surface versus bulk characterization of 3D skyrmion lattices in chiral magnets |
| 10:00 – 10:20 | Max Birch | Real-space imaging of confined magnetic skyrmion tubes |
| 10:20 – 10:40 | Joachim Graefe | Visualizing nanoscale spin waves using MAXYMUS |

10:40 – 11:10 *COFFEE BREAK*

Manipulation

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| 11:10 – 11:30 | Jacob Gayles | Distinct topological magnetic textures in Antiskyrmion hosting Heusler compounds Mn_xYZ with different Berry curvature responses |
| 11:30 – 11:50 | Marijan Beg | Field manipulation of Bloch points in helimagnetic nanostructures |
| 11:50 – 12:10 | Sebastian Schneider | Towards the 3D quantification of skyrmions in thin helimagnets |
| 12:10 – 12:30 | Scientific organizers | Poster awards and closing remarks |
- 12:30 *LUNCH*

End of the seminar and FAREWELL COFFEE / Departure

*Please note that there will be **no** dinner at the Physikzentrum on Thursday evening for participants leaving the next morning.*