

Band Topology in Quantum Magnets: From Nontrivial Excitations to Non-Hermitian Topology and Spintronics

International Focus Workshop 13 - 15 June 2022

This three day focus workshop is the first meeting dedicated to topological magnetic excitations. This relatively young field connects to various topics in contemporary condensed matter including quantum magnetism, spintronics, non-Hermitian topology, the dynamics of complex spin textures, and electronic topological materials coupled to magnetism.

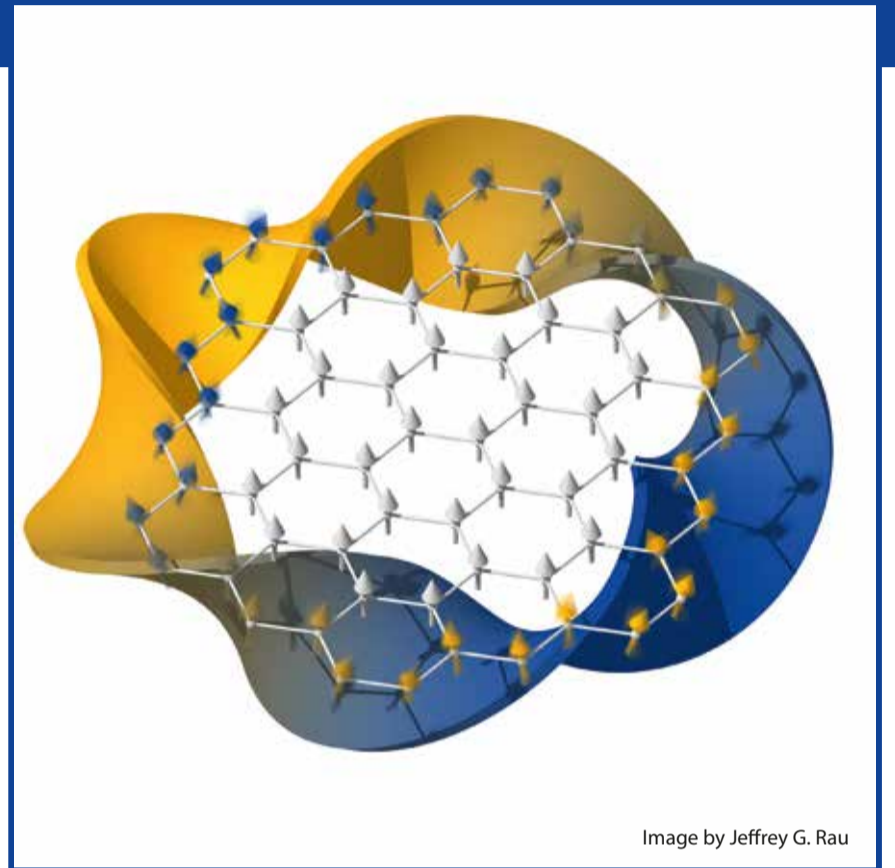


Image by Jeffrey G. Rau

Topics:

Theoretical advances in magnon band-topology:

- Novel response functions arising from nontrivial magnon bands
- Symmetry classification of topological magnon bands
- Necessary conditions for nontrivial magnon topology
- Magnon-magnon interaction and non-Hermitian topological band structures
- Non-Hermitian bulk-boundary correspondence

Magnon band-topology in experiments:

- Hall transport of magnetic excitations
- Hybridization of magnons with photons and phonons
- Direct detection of magnon boundary modes
- Nontrivial band topology in skyrmion systems
- Connections with spintronics and spin-current-based technologies

Applications received before 10th May 2022 are considered preferentially.

We plan for a **hybrid workshop** with a number of participants on-site and the others connected remotely. Online attendance will be possible in any case. The organizers will inform about an option of on-site attendance at a later stage.

For on-site participation the registration fee is 140 Euro; costs for accommodation and meals will be covered by the Max Planck Institute. Limited funding is available to partially cover travel expenses.

No fee for remote participation.

Invited speakers:

Sasha Chernyshev (US)
Markus Garst (DE)
Max Hirschberger (JP)
Hosho Katsura (JP)
Se Kwon Kim (KR)
Yong Baek Kim (CA)
Alexey Kovalev (US)
Yuan-Ming Lu (US)
Ingrid Mertig (DE)
Alexander Mook (CH)
Karlo Penc (HU)
Götz Uhrig (DE)
Matthias Vojta (DE)

Scientific coordinators:

Paul A. McClarty
(Dresden, Germany)

Jeffrey G. Rau
(Windsor, Canada)

Judit Romhányi
(Irvine, USA)

Organisation:

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