

1 Postdoc and 2 PhD students

Magnetic textures are going full 3d. Join us on this exciting journey!

With the newly established Emmy Noether Group “MAGN3D” at KIT, we will theoretically explore novel magnetic textures and their dynamics in 3d. We will work in close collaboration with experimentalists and theorists around the globe in a highly interdisciplinary and international environment. There are three open positions:

Postdoc

Reveal novel 3d magnetic textures in chiral magnets, frustrated magnets, and multilayer systems, using our group-internal modified version of MuMax3. Collaborate with experimentalists at RIKEN (Japan) with Prof. X.Z. Yu and Oak Ridge Natl. Lab. (USA) with Dr. F.S. Yasin to hunt these textures in real materials and help us improve the methods for tomographic 3d measurements and MuMax3. Experience in programming (C++ CUDA, python, Mathematica, Go) required.

PhD student #1

Study static and dynamic surface effects in 3d chiral magnets in close collaboration with experimentalists at NTNU (Norway) from the group of Prof. D. Meier other national and international partners. Combining analytical and numerical methods, we will discover how nanostructures impact magnetic textures in chiral magnets, how we can manipulate and exploit them.

PhD student #2

Explore the dynamics of magnets in the non-linear regime! Using mostly numerical tools, we will investigate instabilities of magnetic textures and dynamical stabilization of new textures. We will collaborate with Prof. N. Nagaosa (RIKEN, Japan) to predict non-linear transport signatures of complex magnetic textures.

Position details, application, inquiries

Start date: March 2025 (flexible)

Duration: 3 years

Funding: DFG Project 547968854 (Emmy Noether Independent Junior Research Group)

Inquiries or applications (motivation letter + academic CV + at least one reference letter) shall be sent to Dr. Jan Masell: jan.masell@kit.edu

