

## **Topological Spin Textures in Chiral Magnets**

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Chiral magnets are a series of magnets with broken inversion symmetry. A new type of spin interaction therein, the Dzyaloshinskii-Moriya interaction, stimulates the formation of many novel topological spin textures. One typical example is the emergence of magnetic skyrmion, whose nontrivial topology enables unique dynamical property and thermal stability and gives out promise on future magnetic memory device. Inspired by skyrmions, in this talk, I will give a comprehensive introduction of skyrmions and their behavior in confined geometries. I will also present three other relevant spin textures in chiral magnets. One is the target skyrmion we recently observed, both theoretically and experimentally, in ultra-small nanodisks of chiral magnets. Zero-field target skyrmions and their polarization switch will be discussed. Putting in heterostructures, we also found a new type of topological configuration dubbed the Hopfion therein. Finally, I will discuss emergent topology driven by thermal fluctuations.

Jiadong Zang received his PhD from Fudan University in 2012. He then worked as Postdoc Fellow in the Institute for Quantum Matter, Johns Hopkins University for three years before joining the Materials Science Program and Department of Physics at the University of New Hampshire as Assistant Professor. His research interests are topological phenomena in condensed matter physics, magnetic skyrmions in non-centrosymmetric magnets, and non-equilibrium quasi-particle transport.