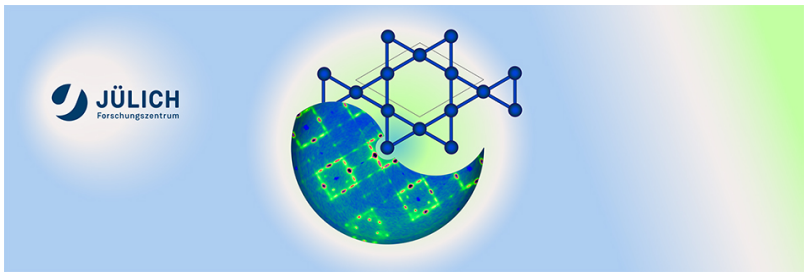

Beitrag ID: **82** Typ: **Invited talk**

Low-Energy Phason Excitations in the Skyrmion Lattice of MnSi Probed by Neutron Spin Echo

Mittwoch, 8. Oktober 2025 13:30 (30 Minuten)

Magnetic skyrmions are vortex-like spin structures that are topologically stable. They have become an important topic in condensed matter physics because of their special properties and possible use in spintronics. In the chiral magnet MnSi, skyrmions form a regular lattice with a period of 18 nm. This lattice can be observed in real space by Lorentz transmission electron microscopy, and in reciprocal space by small-angle neutron scattering (SANS). However, it is still difficult to study the detailed dynamics of the skyrmion lattice, especially at low energies belowμeV and small wavevectors.
In this study, we used the neutron spin-echo (NSE) technique with SANS geometry to look at the low-energy excitations of the skyrmion lattice in MnSi. This method allows us to measure very small energy differences, below 5μeV, in the quasielastic region. We observed asymmetric phason-like excitations, which seem to come from the string-like nature of the skyrmion cores. Our results provide new understanding of how skyrmions move together, and they add to earlier studies using MIEZE and other methods.

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