Abstract Submitted
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Magnetic excitations of the skyrmion host Cu_2OSeO_3 G S TUCKER, Laboratory for Quantum Magnetism, École polytechnique fédérale de Lausanne & Laboratory for Neutron Scattering and Imag, Paul Scherrer Institut, J S WHITE, Laboratory for Neutron Scattering and Imaging, Paul Scherrer Institut, J ROMHÁNYI, Institute for Theoretical Solid State Physics, IFW Dresden, D SZALLER, I KÉZSMÁRKI, Department of Physics, Budapest University of Technology and Economics, B ROESSLI, U STUHR, Laboratory for Neutron Scattering and Imaging, Paul Scherrer Institut, A MAGREZ, Laboratory for Crystal Growth, École polytechnique fédérale de Lausanne, F GROITL, Laboratory for Quantum Magnetism, École polytechnique fédérale de Lausanne & Laboratory for Neutron Scattering and Imag, Paul Scherrer Institut, P BABKEVICH, P HUANG, I ŽIVKOVIĆ, H M RøNNOW, Laboratory for Quantum Magnetism, École polytechnique fédérale de Lausanne — Inelastic neutron scattering (INS) has been used to measure the magnetic excitation spectrum along high-symmetry directions of the first Brillouin zone of the magnetic skyrmion hosting compound Cu_2OSeO_3. The INS data are mostly consistent with the predictions of a recently proposed model for the magnetic excitations in Cu_2OSeO_3, for which best-fit parameters will be reported. As will be shown, differences exist between the model predictions and the experimental findings in the form of two energy scales that likely arise due to neglected anisotropic interactions. Thus highlighting the need for the inclusion of anisotropy in future theoretical works aimed at a full microscopic understanding of the emergence of the skyrmion state in this material.

Laboratory for Quantum Magnetism, École polytechnique fédérale de Lausanne & Laboratory for Neutron Scat

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