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High-resolution neutron spectroscopy of zone-boundary magnons in Cu2OSeO3 under magnetic field

Tuesday, 21 March 2023 16:00 (2 hours)

We report a combined experimental and theoretical study of zone-boundary magnons in Cu2OSeO3 under magnetic field. High-resolution data were recorded at the triple-axis spectrometers Thales and IN8 at the ILL. As our main result we found a strong magnetic-field dependence of the zone-boundary magnons. We discuss our results in terms of theoretical modelling elucidating putative band-sticking [1] and topological nodal planes [2] expected for the non-symmorphic crystal structure of Cu2OSeO3.

[1] C. Herring, Phys. Rev. 50, 361 (1937).
[2] M. A. Wilde, et al., Nature 594, 374 (2021).

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