

Topological features in the magnetotransport of EuIn_2As_2

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Since a decade, topological crystalline insulators (TCIs) have been in focus due to various intriguing quantum phenomena, such as those related to axion electrodynamics or topological magnetoelectric effect [1-2]. Recently, a few TCIs have been identified amidst Eu-based materials, e.g., EuIn_2As_2 , and EuSn_2P_2 [3, 4].

In this work, we comprehensively studied the magnetotransport properties of (hexagonal, P63/mmc), which orders antiferromagnetically at low temperatures, and has been recognized in the literature as an axion insulator [3]. The magnetoresistance and Hall resistivity data, collected on high-quality single crystals, revealed pronounced hysteresis effects, which likely arise due to spin-momentum-locked states coupled to the in-plane ferromagnetic order.

References:

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This work was supported by the National Science Centre (Poland) under research grant 2021/41/B/ST3/01141.