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【169】 Band structure measurements on the topological magnet PrGeAl

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None zero Berry curvature in condensed matter is the fundamental concept behind the unique responses topological materials exhibit. We report intrinsic spin fluctuations to be enough to realise anomalous hall effect (AHE) in PrGeAl. PrGeAl is a topological ferromagnet and is stabilised in a none centrosymmetric structure. Based on muon spin relaxation, transport, angle resolved photo emission spectroscopy (ARPES) measurements and density functional theory calculations, we show AHE in the paramagnetic phase. Our study show that long-range magnetic order and spontaneous time-reversal symmetry breaking are not essential requirements for AHE and can emerge in a wider range of condensed matter systems than previously thought.

Theoretical Work

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