Electronic structure of few-layer crystals of the magnetic topological insulator $MnBi_2Te_4$

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The interplay between non-trivial topology and magnetism in layered materials is fertile ground for the discovery of novel interesting phenomena. $MnBi_2Te_4$ (MBT) is a topological insulator with anti-ferromagnetic ordering below ≈ 24 K [1, 2]. Upon exfoliation MBT can be thinned down to few septuple layers and exhibits exotic transport properties. In its six-septuple-layers form, MBT is an axionic insulator and the application of a magnetic field drives a transition to a Chern insulator with quantized Hall resistance [3]. Five-septuple-layers MBT shows the quantum anomalous Hall effect below 1.4 K, a phase previously reported only for non-stoichiometric crystals [4]. Despite the large interest in the ground state of MBT in its two-dimensional limit, little is known from experiments about its electronic structure. Here, we show preliminary results electronic structure measurements of few-layer MBT. We discuss its fabrication and compare our measurements to bulk MBT.

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