Materials Research Science and Engineering Centers

Discovery of Intrinsic Landau Quantization in an Insulator



Landau quantization in the monolayer insulator



National Science Foundation

MATERIALS RESEARCH SCIENCE AND

ENGINEERING CENTERS

- Huge quantum oscillations, and discrete
 Landau levels (quantized regime), observed
 in the insulating bulk of the monolayer WTe₂
- A possible explanation: Fractionalized neutral fermions and neutral Fermi surfaces hidden in insulators!



P. Wang^{1*}, G. Yu^{1*}, Y. Jia^{1*}, M. Onyszczak¹, F. A. Cevallos¹, S. Lei¹, S. Klemenz¹, K. Watanabe², T. Taniguchi², R. J. <u>Cava¹</u>, L. M. <u>Schoop¹</u>, S. <u>Wu¹</u>, Nature **589**, 225–229 (2021)

¹ Princeton University, USA ²National Institute for Materials Science, Tsukuba, Japan



