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Two dimensional Fermi surfaces in Kondo insulator SmB_6 GANG LI, Univ. of Michigan, ZIJI XIANG, Univ. of Michigan, Univ. of Sci. and Tech. of China, FAN YU, TOMOYA ASABA, BENJAMIN LAWSON, Univ. of Michigan, PENG CAI, Univ. of Michigan, TsingHua Univ., China, COLIN TINSMAN, ADAM BERKLEY, STEVEN WOLGAST, YUN SUK EO, Univ. of Michigan, DAE-JEONG KIM, Univ. of California, Irvine, CAGLIYAN KURDAK, JAMES ALLEN, KAI SUN, Univ. of Michigan, XIANHUI CHEN, Univ. of Sci. and Tech. of China, YAYU WANG, TsingHua Univ., China, ZACHARY FISK, Univ. of California, Irvine, LU LI, Univ. of Michigan — Samarium hexaboride SmB_6 belongs to a class of strongly correlated heavy Fermion semiconductors, in which hybridization between itinerant electrons and localized orbitals lead to opening of a charge gap at low temperature. However, the resistivity of SmB_6 does not diverge but saturates below $\sim$ 2 Kelvin. Former studies suggested that this residual conductance is contributed by intragap states with various origins. Recent theoretical developments suggest that the particular symmetry of energy bands of SmB_6 may host a topologically non-trivial surface state, i.e., a topological Kondo insulator. To probe the Fermiology of the possible metallic surface state, we use highly sensitive torque magnetometry to detect the de Haas van Alphen (dHvA) effect due to Landau level quantization. Our detailed angular and temperature data suggest two-dimensional Fermi Surfaces lie in both crystalline (001) and (101) surface planes of SmB_6.

Gang Li
Univ. of Michigan

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